

THE B. F. GOODRICH

**FARMER'S
HANDBOOK**

AND ALMANAC

1946

B. F. Goodrich Dealer



Our Friends and Customers are Always Welcome

Whenever you're in town, we're glad to have you stop in and see us, whether it's for a neighborly visit or to get helpful information about tires and tire care. Chances are you'll run into some of your friends and neighbors in our store—and you can pass the time of day.

It's our aim to give you the finest quality products available. So, we handle the complete line of B. F. Goodrich tires for passenger cars, trucks, tractors and implements.

And you get more than fine quality tires and good service. For through us you get the full benefit of the expert knowledge of B. F. Goodrich engineers on the subject of tires and tire care. We're always ready to help—whether you bought your tires from us, or elsewhere.

If you'll be making your first visit to our store, we'll do our best to make you welcome; you'll find our address on the back of this book. And, we hope you'll find this book helpful.

More miles with
B.F. Goodrich
FIRST IN RUBBER

THE B. F. GOODRICH

FARMER'S HANDBOOK and ALMANAC

FOR 1946

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Compliments of

Your B. F. Goodrich Dealer

CUTS FARM TRUCKING COSTS

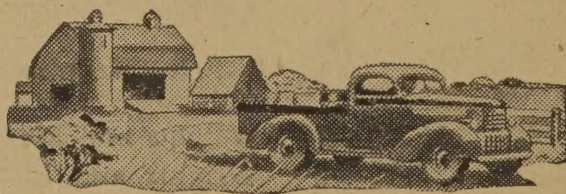
Extra Traction . . .
off the pavement



Long wear . . .
on the highway

Here's a real *double-duty* truck tire that's ideal for farm use. *Off* the pavement—in the field or on side roads—the tough cleats grip the earth. There's full traction both forwards and backwards. And the special zig-zag angle tread design assures positive self-cleaning—does not hold stones or gravel. *On* the highway—the

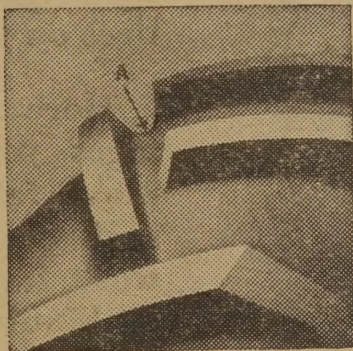
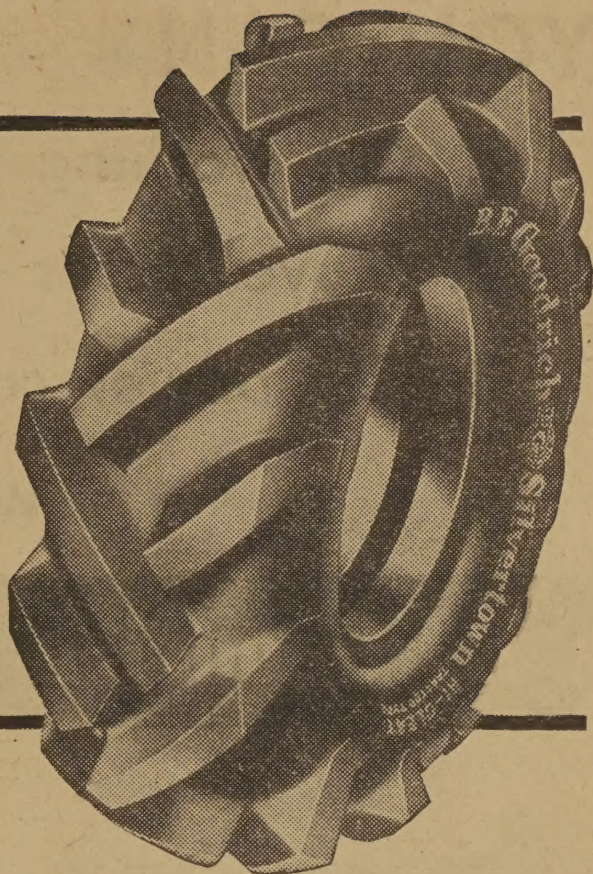
continuous ribs and wide riding bars give smooth going, greater road contact, and long, even wear. Rugged and tough—the All-Purpose is ideal for all farm trucking needs, from field to market or from home to town. Equip *your* truck with these double-duty All-Purpose truck tires—and *save* time and money.



B.F. Goodrich

ALL-PURPOSE TRUCK TIRE

THIS
TRACTOR TIRE
Lasts Longer
Pulls Better



You can save on fuel—do more work in less time with B. F. Goodrich Tires on your tractor. For this tire was carefully and scientifically designed with the aid of farmers themselves—designed to give full traction, full power, and therefore low fuel cost.

After hundreds of different tread designs were tried and tested by B. F. Goodrich engineers, the Hi-Cleat design was the one they found *best* under *all* types of working conditions. Here are some of the reasons why:

Cleats run in *pairs*, instead of singly. Here's double bite—a steady pull for tough going. Slippage is lessened. Work is done faster. The height of the cleat is determined to the hundredth of an inch to help give best traction. Cleats are not connected—there are no mud-catching pockets. The open-center tread is self-cleaning; it gives as it rolls—mud and trash drop out. Work goes faster—and easier.

No other tractor tire gives you all these advantages. That's why Hi-Cleat *saves* for you—wears long and well.

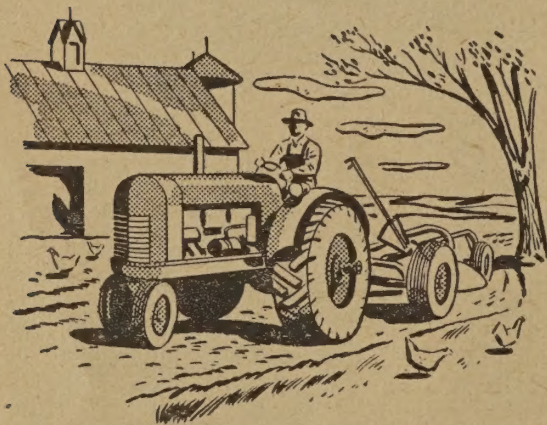
B.F. Goodrich *Hi-Cleat*

YOU CAN—

1. Cut working time
2. Move faster from job to job
3. Cut power costs

with

B.F. Goodrich *Implement Tires*

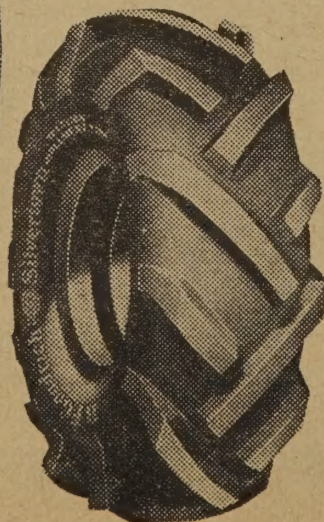
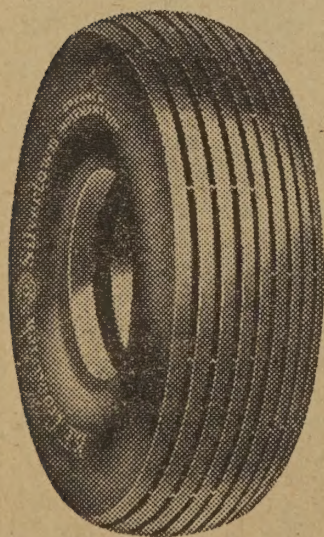


Rubber tires on your tractor give you many advantages—extra savings. You gain even *more* when you have B. F. Goodrich tires on your implements, also.

Here are some of the advantages you can enjoy: you can move faster from job to job—saving valuable time; you can work faster in the field; you get cushioning for the load, the equipment, and the operator; you can work in soil where steel wheels would cut in or bog down.

B. F. Goodrich Implement Tires are designed for smooth rolling and long life. And—you make further savings on your investment, because when you change over from steel, one set of tires may be used on more than one implement, by a *planned* changeover.

See us about a changeover to B. F. Goodrich Implement Tires. We'll be glad to plan it for you.

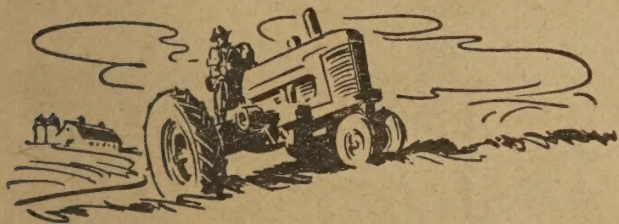


RULES FOR SAFE TRACTOR OPERATION

*Rules compiled by the
Farm Safety Committee of the Farm Equipment Institute
and approved by the National Safety Council, Inc.*

1. Be sure the gear shift lever is in neutral before cranking the engine.

2. Always engage the clutch gently, especially when going up a hill or pulling out of a ditch.



3. When driving on highways, or to and from fields, be sure that both wheels are braked simultaneously when making an emergency stop.

4. Always ride on seat or stand on platform of tractor. Never ride on drawbar of tractor or drawn implement.

5. When tractor is hitched to a stump or heavy load, always hitch to drawbar and never take up the slack of chain with a jerk.



6. Be extra careful when working on hillsides. Watch out for holes or ditches into which a wheel may drop and cause tractor to overturn.

7. Always keep tractor in gear when going down steep hills or grades.

8. Always drive tractor at speeds slow enough to insure safety, especially over rough ground or near ditches.

9. Reduce speed before making a turn or applying brakes. The hazard of over-

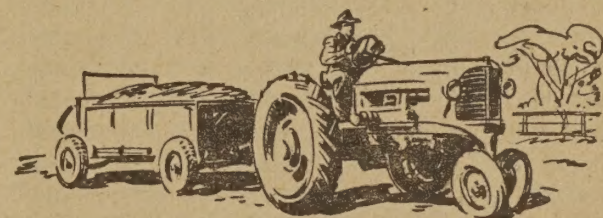
turning the tractor increases four times when speed is doubled.

10. Always stop power take-off before dismounting from tractor.

11. Never dismount from tractor when it is in motion. Wait until it stops.

12. Never permit persons other than the driver to ride on tractor when it is in operation.

13. Never stand between tractor and drawn implement when hitching. Use an iron hook to handle drawbar.



14. Do not put on or remove belt from belt pulley while the pulley is in motion.

15. Should motor overheat, be careful when refilling radiator.

16. Never refuel tractor while motor is running or extremely hot.

17. When tractor is attached to a power implement be sure that all power line shielding is in place.

18. Wear clothing with no loose ends to catch in the machine or trip you.

19. Do not hitch loads to the tractor axle.



**Remember a CAREFUL OPERATOR always
is the BEST INSURANCE against an accident.**

CARE OF FARM MACHINERY

Moisture is the greatest enemy of farm machinery. In time it destroys paint, rusts and pits metal, warps wood, rots canvas and leather. It makes machines pull hard, causes moving parts to bind, which leads to breakdowns and delays.

The first protection against moisture is proper housing. On well managed farms, all machinery is kept in sheds when not in use. If it is impractical to house machinery every night, it can be covered with canvas or even old sacks sewed together, as a protection against rain or dew. Plow bottoms or other scouring parts should be greased when left in the open. You can use old crank case oil for this. Certainly leaving machinery exposed to weather the year around is the worst kind of economy.

If no sheds are available, they can be built at small cost. On most farms there is enough waste lumber to erect the main parts of a shed. Tar paper or sheet metal, can be used in place of siding, if the latter is too expensive. A good width for a shed is 26 feet, which will accommodate the largest units of farm machinery. The shed can be built in 12 or 14 foot sections, so that other sections can be added later, if necessary. Inside posts should not be used and plenty of space allowed so that any machine can be taken out quickly.

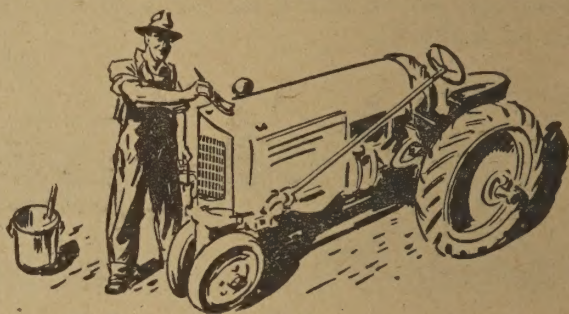


Be sure the shed includes a tool bench and keep the tools on the bench. Tools should include a supply of various sized nuts, bolts and cotter pins, as well as extra knives, spare parts and lubricants.

A small investment in tools and parts will permit you to make prompt repairs, saving of vital time. Machines should be promptly repaired or adjusted at the first sign of being out of order. Running them in poor condition may result in considerable damage. Go over machines periodically while in use and tighten up or re-

place all nuts, bolts and cotter pins.

The advantage of a properly equipped machinery shed is that repair and upkeep work can be done at any time. When the season's work is over, make a list of necessary repairs and adjustments. Get any repair parts necessary at once and do the work during the winter.



Repaint, where necessary, all painted metal parts. Do not paint over rust, or you will waste both time and paint. Remove rust with emery cloth or steel wool. Clean all bright metal parts and coat them with grease. Thoroughly lubricate the entire machine, filling oil and grease cups.

When machines are placed in the shed for the winter, put boards under the metal wheels, if there is no floor. If wheels have rubber tires, we suggest that the machine be jacked up. Oil and grease are the natural enemies of rubber and should be washed off with gasoline. This applies to tires and all other rubber parts.

Place a block or support under the center of tongues or other long wooden parts to prevent sag. If paint has come off wooden parts, repaint them. The color of the paint does not matter, but the quality does. Good paint goes farther, lasts longer and really protects against decay. For unpainted wooden parts, such as rollers, apply warm, raw linseed oil.

Remove any canvas parts, wrap them and hang in dry place, away from rats or mice. Likewise, remove and store leather parts, after applying harness dressing, castor oil or tallow. Never use machine oil on leather.

When putting up motorized equipment, drain the cooling system and lubricate thoroughly. Do not drain engine oil, but change before starting the motor again. Remove all storage or dry batteries and place in a cool dry spot. Add water to storage batteries monthly when not in use.

GESTATION TABLE

The probable date of birth of the common farm animals listed below may vary a few days. The gestation period of cats varies from 56 to 63 days. The table shows 63 days, the same as for dogs.

DATE OF SERVICE	SOW	EWE	COW	MARE	DOGS OR CATS
Jan. 1	April 25	May 31	Oct. 8	Dec. 7	March 3
Jan. 8	May 2	June 7	Oct. 15	Dec. 14	March 10
Jan. 15	May 9	June 14	Oct. 22	Dec. 21	March 17
Jan. 22	May 16	June 21	Oct. 29	Dec. 28	March 24
Jan. 29	May 23	June 28	Nov. 5	Jan. 4	March 31
Feb. 5	May 30	July 5	Nov. 12	Jan. 11	April 7
Feb. 12	June 6	July 12	Nov. 19	Jan. 18	April 14
Feb. 19	June 13	July 19	Nov. 26	Jan. 25	April 21
Feb. 26	June 20	July 26	Dec. 3	Feb. 1	April 28
March 5	June 27	Aug. 2	Dec. 10	Feb. 8	May 5
March 12	July 4	Aug. 9	Dec. 17	Feb. 15	May 12
March 19	July 11	Aug. 16	Dec. 24	Feb. 22	May 19
March 26	July 18	Aug. 23	Dec. 31	Feb. 29	May 26
April 2	July 25	Aug. 30	Jan. 7	March 8	June 2
April 9	Aug. 1	Sept. 6	Jan. 14	March 15	June 9
April 16	Aug. 8	Sept. 13	Jan. 21	March 22	June 16
April 23	Aug. 15	Sept. 20	Jan. 28	March 29	June 23
April 30	Aug. 22	Sept. 27	Feb. 4	April 5	June 30
May 7	Aug. 29	Oct. 4	Feb. 11	April 12	July 7
May 14	Sept. 5	Oct. 11	Feb. 18	April 19	July 14
May 21	Sept. 12	Oct. 18	Feb. 25	April 26	July 21
May 28	Sept. 19	Oct. 25	March 4	May 3	July 28
June 4	Sept. 26	Nov. 1	March 11	May 10	Aug. 4
June 11	Oct. 3	Nov. 8	March 18	May 17	Aug. 11
June 18	Oct. 10	Nov. 15	March 25	May 24	Aug. 18
June 25	Oct. 17	Nov. 22	April 1	May 31	Aug. 25
July 2	Oct. 24	Nov. 29	April 8	June 7	Sept. 1
July 9	Oct. 31	Dec. 6	April 15	June 14	Sept. 8
July 16	Nov. 7	Dec. 13	April 22	June 21	Sept. 15
July 23	Nov. 14	Dec. 20	April 29	June 28	Sept. 22
July 30	Nov. 21	Dec. 27	May 6	July 5	Sept. 29
Aug. 6	Nov. 28	Jan. 3	May 13	July 12	Oct. 6
Aug. 13	Dec. 5	Jan. 10	May 20	July 19	Oct. 13
Aug. 20	Dec. 12	Jan. 17	May 27	July 26	Oct. 20
Aug. 27	Dec. 19	Jan. 24	June 3	Aug. 2	Oct. 27
Sept. 3	Dec. 26	Jan. 31	June 10	Aug. 9	Nov. 3
Sept. 10	Jan. 2	Feb. 7	June 17	Aug. 16	Nov. 10
Sept. 17	Jan. 9	Feb. 14	June 24	Aug. 23	Nov. 17
Sept. 24	Jan. 16	Feb. 21	July 1	Aug. 30	Nov. 24
Oct. 1	Jan. 23	Feb. 28	July 8	Sept. 6	Dec. 1
Oct. 8	Jan. 30	March 7	July 15	Sept. 13	Dec. 8
Oct. 15	Feb. 6	March 14	July 22	Sept. 20	Dec. 15
Oct. 22	Feb. 13	March 21	July 29	Sept. 27	Dec. 22
Oct. 29	Feb. 20	March 28	Aug. 5	Oct. 4	Dec. 29
Nov. 5	Feb. 27	April 4	Aug. 12	Oct. 11	Jan. 5
Nov. 12	March 6	April 11	Aug. 19	Oct. 18	Jan. 12
Nov. 19	March 13	April 18	Aug. 26	Oct. 25	Jan. 19
Nov. 26	March 20	April 25	Sept. 2	Nov. 1	Jan. 26
Dec. 3	March 27	May 2	Sept. 9	Nov. 8	Feb. 2
Dec. 10	April 3	May 9	Sept. 16	Nov. 15	Feb. 9
Dec. 17	April 10	May 16	Sept. 23	Nov. 22	Feb. 16
Dec. 24	April 17	May 23	Sept. 30	Nov. 29	Feb. 23

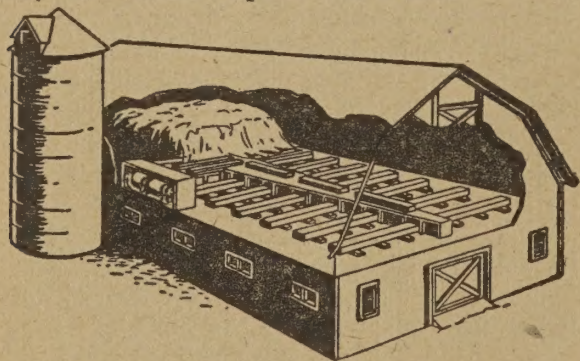
DRYING HAY WITH FORCED VENTILATION

Farmers have found their hay is worth more as the result of installing a system for drying hay in the mow or stack with forced ventilation.

And that isn't all. Completing the cure of partially dried hay by forcing air through it from ducts connected to a motor-driven fan may save a crop that would be lost due to rainy weather; may save a crop and barn from loss by fire due to spontaneous combustion; results in leafier, greener hay.

Men working in the mow during haying may consider the cooler, dust-free air enough reward for the cost of the system, while the saving of labor in haying operations by doing the work as scheduled and gaining hours a day justifies the cost for some farmers.

The equipment and methods of operation used in forced ventilation are so simple that almost every farmer can have and use it. Since most of the flues and tunnels used to distribute the air to the hay may be constructed of rough sawed lumber from farm woodlots, about the only new item required is a fan.

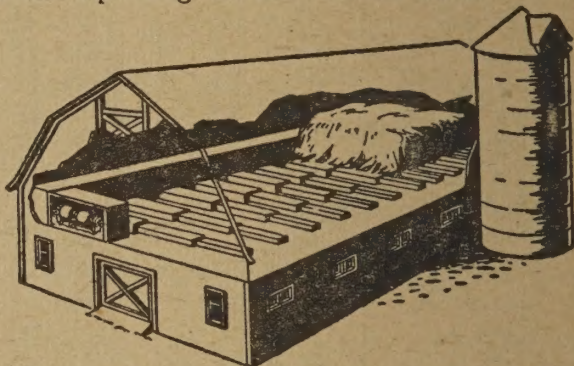


Where the main tunnel is in the center, lateral ducts extend out on both sides at right angles. They are about 12 feet long, 6 inches high and 8 inches wide, and extend to within 5 feet of the edge of the hay. Cleats on the bottom space the flues one inch above the floor to permit air to escape from the flue to the hay.

If the main tunnel is placed at the side, small flues run from it about 5 feet apart on the mow floor. They are open on the bottom, like an upside-down trough and cleats provide space along each side for the air to be distributed to the hay. The flues extend from the main air tunnel to within 5 feet of the outer edge of the hay. The main tunnel and the mow floor should be made reasonably air tight.

The center tunnel type requires less material and need not be as air tight as

the side tunnel type. It is more of an obstruction when the mow is empty or partially empty and there is no way to adjust the flues to control air flow. The side tunnel type is accessible at almost any point and usually occupies less important mow space. It can be built large enough for a person to walk in and adjust the size of the openings in the lateral flues.



Since the air tends to flow where there is least resistance, the hay should be distributed at an even depth in the mow. The fan may be operated as soon as there is a layer of hay over the flues.

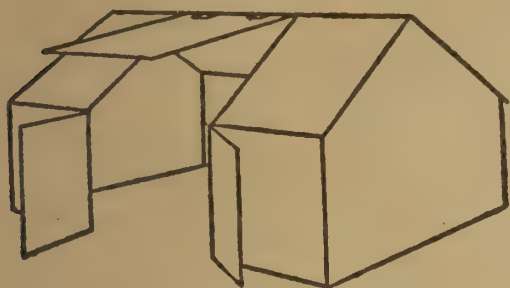
The rate of hay drying depends upon not only the amount of moisture in the hay but also weather conditions and the volume of air used. If the hay is very tough, that is around 45% moisture, it is desirable not to fill the mow over 6 to 8 feet deep until this hay is nearly dry. Where the hay is nearly dry, it may be brought in about as fast as desired. It requires from two to three weeks' time to dry a mow.

Experience with drying hay in the mow indicates that an air supply of about 10 cubic feet of air per minute for each square foot of floor area is satisfactory under most conditions.

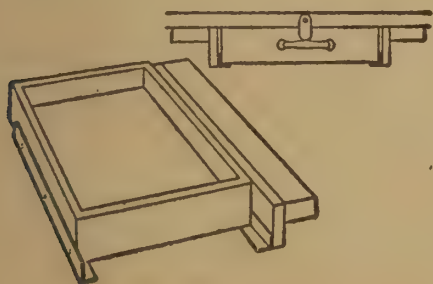
Since the air is delivered under pressure, the fan may be located almost any place—above, below, or delivering directly into the main tunnel. It should be located, however, where it can obtain fresh outside air. The air should not be re-circulated. The fan usually can operate both night and day in good drying weather. In poor drying weather, including even the time while it rains, the fan should be operated for an hour or two at intervals of 6 to 12 hours, or long enough to cool the hay. Good practice indicates that the fan may be operated regardless of the kind of weather whenever the temperature of the hay is from 10 to 20 degrees F. warmer than the air.

WORK SAVERS

Here's one way to remodel a shed that is too low at the doors under the eaves to admit machines. The center section of the roof can be framed as shown, and hinged at the top; the two end sections are braced and framed so that the gap left in the plate in the center will not weaken the roof structure. The center-section may then be lifted enough to run the machines in, and lowered back in place.



To hold mittens, husking pin, tools, etc., a drawer to slide under the wagon box is a big help. The drawer is a shallow box 4" deep, 20" wide, approximately two feet long. To slide the drawer in and out, nail 1 x 4 pieces onto the edge of 2 x 4's, with an angle iron at the edge of each 1 x 4 as shown. With the 2 x 4 bolted to the bottom of the wagon box, spaced so the drawer slides in and out on the angle irons, the drawer is slid into place. To hold the drawer in place, a button on the wagon box may be used.



The paper lining placed inside our snow-fence silo has to be held in place until the silage is against it. For this job we have made a number of clamps like giant clothespins by nailing together two 18" lengths of lath with a 4" length at one end between them. As many as you want of these can be made and placed over the top edge of paper and snow-fence section. They are pulled off when the silage is high enough to hold the paper.—R.L.B., Wis.



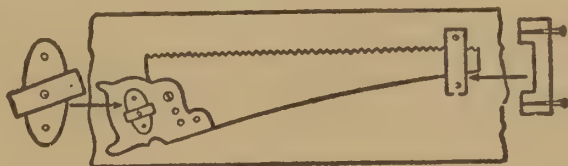
Paint may be mixed an easy way by the device shown above. A $\frac{3}{8}$ " rod about 16" long is bent as shown, then put in a high-speed, power drill.

* * *

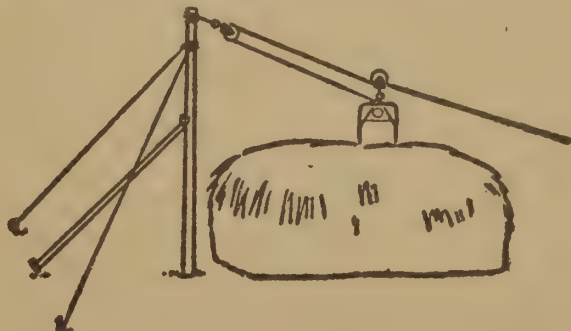
I have found that a good container in which to keep ointment and salve for cattle is an old grease gun. It keeps the ointment clean and ready for use at any time.—E.S., Wis.

* * *

When I rake leaves in the fall I put a deep layer on the chicken-house floor for scratch litter, and pack plenty of leaves in sacks and hang in a shed to keep dry. Then I put fresh leaves in the chicken house as needed. They furnish litter for some time when straw and other litter is so high. By running the leaves thru the chicken house they are crushed and pulverized and are excellent to spread on the garden.—Mrs. L.E.W., Ind.



To hold saws in a tool box, a board may be fitted with a slot in it at one end, and a block with a button on it at the other to put through the handle of the saw as shown. This holder helps protect the saw teeth against damage.



If you pitch hay on the stack by hand, you can make a stack bigger and quicker by putting a pulley on the horse fork as shown. The pulley keeps the bunch of hay from wearing a hole in the stack.

Courtesy of Successful Farming.

FACTS ABOUT SILOS & SILAGE

A Silo Will —

- give 25 to 30% more feeding value to the corn crop than when it is fed as dry grain and fodder.
- store about 2½ times as many pounds of nutrients in the same space as a mow.
- provide the cheapest form of succulent feed, considering yield per acre and labor required.
- increase the livestock carrying capacity of the farm.
- permit a reduction in the amount of grain fed.
- provide food having a beneficial effect on the digestive system.
- prevent waste and save labor.

A Silo Should —

- have airtight walls to prevent spoilage.
- be cylindrical in shape if possible. Cylindrical silos take less material to build and are easier to pack than a silo with corners.
- be as high as possible, within reason, at least twice its diameter. In high silos the silage packs better, reducing losses by spoilage.
- have smooth inside walls to prevent air pockets when filling.
- have tight fitting and convenient doors.
- be carefully planned to meet the needs of present and prospective livestock.

Approximate Capacity of Cylindrical Silos

Depth of Silage After Settling	INSIDE DIAMETER					
	10'	12'	14'	16'	18'	20'
	Tons of Silage	Tons of Silage	Tons of Silage	Tons of Silage	Tons of Silage	Tons of Silage
26	37	54	74	97	122	151
28	42	61	83	108	137	169
30	47	67	91	119	151	187
32	51	74	100	131	166	205
34	56	80	109	143	181	224
36	61	87	118	155	196	242
40	70	101	138	180	229	280

An Added Silo

Sometimes it becomes necessary to build another and larger silo. If summer feeding is done, the smaller silo can be reserved for warm weather use. This permits feeding off to a greater depth, thus helping to prevent spoilage.



Relation of Size of Silo to Length of Feeding Period and Size of Herd

No. Cows consuming 40 pounds of silage daily	FEED FOR 180 DAYS			FEED FOR 240 DAYS		
	Est'd Amount Silage consumed (tons)	Size of Silo		Est'd Amount Silage consumed (tons)	Size of Silo	
		Diam. (feet)	Hgt. (feet)		Diam. (feet)	Hgt. (feet)
10	36	10	25	48	10	31
12	43	10	28	57	10	35
15	54	11	29	72	11	36
20	72	12	32	96	12	39
25	90	13	33	120	13	40
30	108	14	34	144	15	37
35	126	15	34	168	16	38
40	144	16	35	192	17	39
45	162	16	37	216	18	39
50	180	17	37	240	19	39

Suitable Silage Crops

Corn—Probably 90% of all silage is corn. Slow maturing varieties best. Should be harvested in glazed stage. Best when moist enough to pack with little water.

Sorghums—Harvest when seed is hard. Cut finely to remove air.

Legumes and Grasses—Harvest in hay time. Usually best mixed with corn or sorghums because of low sugar content.

Small Grains—Harvest when kernels are passing into dough stage. Cut finely and pack well.

Peas and Oats or Vetch and Wheat—Plant together and harvest when oats or wheat are passing into dough stage.

Beet Tops—Put into silo promptly after beets are topped. Harvest as clean as possible and place straw at bottom of silo to absorb excess moisture.

Soy Beans—Usually sown with corn or sorghums and harvested at same time. Excellent to increase protein content of silage.

Sunflowers—Generally used where corn growing season is too short. Harvest before seeds develop. Good feeding value if properly harvested and packed.

How Rubber-Tired Equipment Makes Savings

Factual records of impartial tests prove that farmers who have their tractors and implements on rubber tires enjoy greater savings and advantages than farmers who work on steel wheels. Chief among these advantages is the saving in time. More work can be done per day because rubber-tired tractors cut substantially the time required for plowing, cultivating, harvesting—work in which time is very often the vital factor. Tests show that rubber tires save as much as 24 days a year for each 150 acres worked.

Carefully kept records of nearly 200 Iowa farmers on their experience with tractor tires show very substantial savings. For example, average saving in time was 23%, fuel costs were reduced an average of 22%, tractor tires averaged a minimum of 7 years' service per set, and maintenance costs were very low. These farmers' experience of greater speed and extra power provided by rubber-tired tractors is also borne out by reports from farmers across the nation. The greater

ease of operation frequently means the difference between hiring or not hiring extra help.

Power-savings are another important feature of rubber-tired tractors compared to steel wheels. Frequently a tractor with rubber tires can work in soil entirely unsuited to steel lugs, making possible the use of land that otherwise might lie idle. It has been proved many times that tires on tractors and implements eliminate the damage to crops caused frequently through cultivating with steel lugged equipment.

Comparison of Rubber Tires vs. Steel Wheels on working 150 acres.

	Steel	Rubber
Hours work per year..	1300	1063
Number of		
10-hour days.....	130	106
Hours per acre required	8.7	7.1
Gallons of fuel used...	1950	1275
Gals. of fuel used		
per hour	1.5	1.2
Cost of fuel used.....	\$195.00	\$127.50

How to Change from Steel Wheels to Rubber Tires

Some farmers have the equipment, time, and the "know how" to make the changeover from steel wheels to rubber tires. But by far the great majority prefer to have the job done by trained experts, saving money and time in the long run.

We recommend, if you wish to make a changeover, that you give us a call. We'll come out, thoroughly inspect your steel-wheeled tractor, survey the type of work it is used for, and recommend the B. F. Goodrich Silvertowns best suited to your needs.

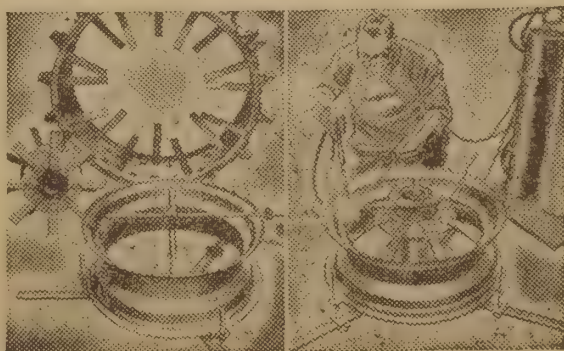
After this recommendation, we'll remove your steel wheels and take them back into our shop—where we have complete equipment to do the job speedily.

The first step we take is to have your wheels cut down expertly and apply pneumatic tire rims. This saves you the expense of buying new wheels.

When the wheels have been cut down, rims applied, then carefully adjusted and located, we install the B. F. Goodrich tires suited to your particular needs. The

entire job doesn't take long when done our expert way, and doesn't cost much. The minute you begin using your B. F. Goodrich-tired tractor you begin saving on fuel, on time, and on repairs—and you save every day. You'll find new comfort, too—because Silvertowns are the easiest-riding tractor tires ever built.

Your implements can also be changed over to new B. F. Goodrich implement tires in much the same way—in some cases, one set of tires will fit several implements. Call us—we can do the job for you, on tractor or implement.





Recommended Air Pressures for Tractor Tires

Front Tires — All Sizes

1-4 Ply Tires28 lbs. 2-6 Ply Tires36 lbs.

Rear Tires — All Sizes*

- 3—Minimum Inflation Pressure12 lbs.
 4—When plowing, increase pressure in tire on furrow wheel by..... 4 lbs.
 5—When special heavy wheels are used, or heavy implements such as corn pickers, bedders, etc., are carried on the tractor, inflation pressure must be increased. See Tire and Rim Association schedule or contact the tractor dealer or manufacturer.

Adopted by Tire & Rim Association

**Exceptions are the small section dual tires which require a minimum of 20 pounds per sq. in.*

Recommended Air Pressures for Implement Tires

TIRE SIZE All Rim Diameters	AIR PRESSURE (Lbs.)			
	4 Ply	6 Ply	8 Ply	10 Ply
3.00	44			
3.50	40	48		
4.00	36	48		
5.00, 5.50	32	44		
6.00, 6.50, 7.00	28	40	56	
7.50, 8.25	24	36	48	
9.00	20	32	44	56
11.25		28	36	44
12.75		24	32	

Note: On manure spreaders, use 6-ply tires; maintain 36 lbs. air pressure. For long tire life, maintain recommended air pressures at all times.

The Future Of Rubber Tracks For Farm Equipment

Many peacetime uses for rubber track vehicles are now in view. Actual tests have already been made on some, including rubber-track farm tractors. A few specialized uses of tracks for implements are also under way, with indications that rubber tracks will make important contributions to efficient operations, including combines, corn pickers, and many others.

Rubber-track vehicles are not now thought of as a replacement for the wheel type tractor, but rather as a new source of traction to do certain jobs better and at lower cost.



The Army's Studebaker "Weasel" equipped with broad rubber tracks by B. F. Goodrich.

Earliest use of rubber-track equipment will probably be concentrated on the larger farms, where the time-saving feature will be especially important. However, the overall economy which will be an outstanding contribution, should lead to widespread acceptance of such equipment, for many specialized uses.

Outstanding advantages that have been demonstrated include more uniform, sure-footed traction. It is estimated that there may be as much as 200 per cent greater drawbar pull, and wheel weights will be unnecessary.

Rubber tracks provide greater comfort for the operator because the track undercarriage automatically adjusts itself to ground irregularities, thus reducing shocks and jolts.

Because the track contacts a larger area on the ground, it spreads the weight of the tractor and greatly reduces soil packing.

Our proving ground tests on tractors indicate that tracks may last the normal life of the tractor, thus providing extra economy for the operator.

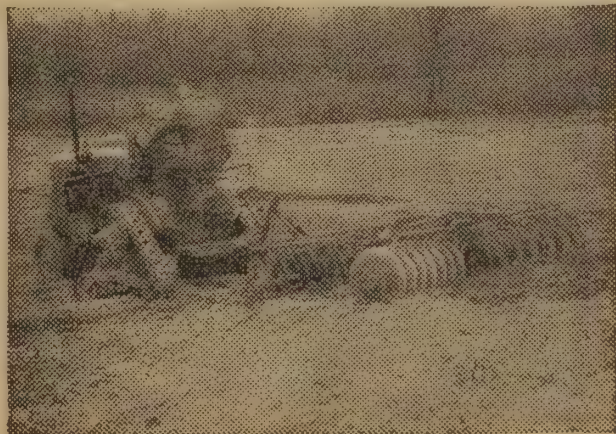
Time-saving results from the absence of blow-outs or punctures, thus adding an extra factor of economy.



Experimental model tractor with B. F. Goodrich rubber tracks. Note track articulation.

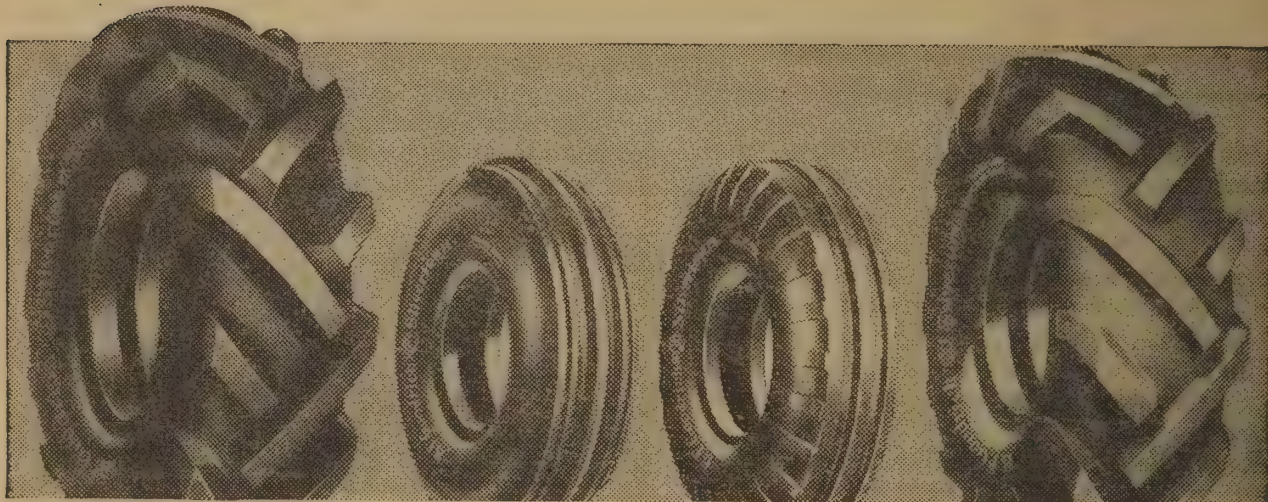
Application of rubber tracks to vehicles of many kinds during World War II has made it possible to carry those vehicles through mud, sand, and swamps under conditions which provided tougher proving grounds for the tracks than could ever have been made available otherwise. B. F. Goodrich produced over half a million rubber tracks for these military vehicles.

The development of rubber tracks at B. F. Goodrich, however, goes back many years before they became important for military uses. It was this background of early study on peacetime applications that made B. F. Goodrich ready to meet the war needs. Now its engineers are cooperating with several manufacturers of tractors to develop those peacetime products for your use.



Crawler tractor equipped with B. F. Goodrich endless band rubber track.

Tire Buyers GUIDE for Tractors, Implements, Trucks and Passenger Cars



HI-CLEAT (Rear Tractor)

Open, pocket-free tread for positive self-cleaning. Note extra deep reinforced cleats in pairs.

MULTI-RING (Front Wheel)

A front-wheel tractor tire combining the best features of the Skid-Ring and Rib-Tread designs.

RIB-TREAD (Front Wheel)

This all-purpose front-wheeler provides maximum cushioning and is unequaled for long wear.

TRACTION IMPLEMENT

Rugged cleats provide traction required by ground-driven implements — garden tractors.



GROOVED IMPLEMENT

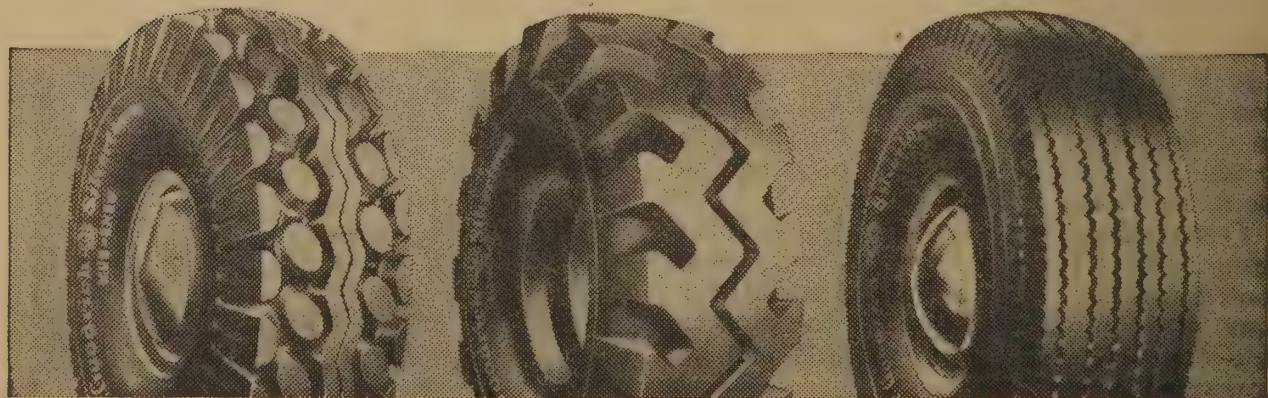
Grooved design reduces sideslip and rolling resistance, gives maximum cushioning. Extra - thick tread for longer life.

PLOW TAILWHEEL

Plow to more uniform depth, make better corners, move faster between jobs, greater cushion from operating shocks.

SPEEDLINER (Truck)

For all-around, heavy duty, highway transportation. Improved design — new ventilation grooves give cooler running.



MUD-SNOW (Passenger)

Two-way traction — forward or backward through mud and snow, on or off the highway, without use of chains.

ALL-PURPOSE (Truck)

For extra traction off-the-road and long wear on the highway. Smooth running, long wearing, self-cleaning.

PASSENGER SILVER-TOWN.

Outwears prewar tires. New, better tire-type rubber, 35% stronger tire body, Road Level tread for better traction.

CANDY RECIPES

Peanut Butter Fudge

2 cups granulated sugar ¼ cup peanut butter
2 squares chocolate 1 teaspoon vanilla
1 cup milk ⅛ teaspoon salt

Melt chocolate and mix with sugar, milk and salt. Cook rapidly, stirring until sugar is dissolved. Then cook slowly until mixture forms a soft ball when dropped in water. Add peanut butter and vanilla. Cook. Beat until thick and creamy and pour into greased pan.

Coconut Squares

2 teaspoons butter ½ teaspoon vanilla
1½ cups sugar ¼ cup shredded coconut
1 cup milk

Melt butter in saucepan, then add sugar and milk, stirring until sugar dissolves. Boil 12 minutes then remove from fire. Add vanilla and coconut and beat until creamy. Pour into greased pan. When cool, mark in squares.

Butter Taffy

3 cups brown sugar ¼ cup vinegar
¼ cup water 4 tablespoons butter
½ cup molasses 1 teaspoon vanilla

Boil sugar, water, molasses and vinegar until it forms a crisp ball in cold water. Add butter and cook 3 minutes. Add vanilla and pour on buttered pans. When cold break in pieces.

Wintergreen Creams

2 cups sugar 1 teaspoon wintergreen extract
2/3 cup water ⅛ teaspoon cream of tartar

Bring water and sugar to boil, then add cream of tartar. Continue boiling until syrup strings. Then take from fire and add wintergreen. Beat until it begins to grain, then drop quickly on waxed paper. Peppermint or other flavors may be used instead of wintergreen.

Chocolate-Coated Candied Apples

1 cup sugar ¼ teaspoon salt
1 cup honey 3 tart, firm apples
½ cup water

Boil together the sugar, honey, water and salt for a few minutes. Wash, core and pare the apples, cut into half-moon shapes pieces about half an inch thick, drop into the sirup, and cook rapidly until the apples are transparent and prac-



tically all the sirup is absorbed. Lift onto waxed paper to dry. Break up cake chocolate made especially for dipping candies, and put into a shallow dish over hot water. As soon as the chocolate begins to soften, remove from the hot water, and stir the chocolate until it is all melted. Dip the pieces of apple into the melted chocolate until well coated, and place on waxed paper to dry. Pack the apple candies in layers between waxed paper.

Milk Chocolate Drops

12 squares sweetened chocolate 1 teaspoon vanilla
1½ cups condensed milk 1 cup shredded coconut

Melt chocolate in double boiler, add milk. Blend thoroughly, adding vanilla and coconut. Drop on waxed paper.

Coconut Marshmallows

½ pound marshmallows ¼ cup dark corn sirup
2 cups shredded coconut 1 tablespoon honey
 1 tablespoon hot water

Bring corn sirup, honey and water to a boil and let cool at once. Place the coconut in a hot oven until brown. Coat the marshmallows with the syrup and roll in the coconut until covered.

Popcorn Balls

1½ cups sugar 1 teaspoon vanilla
1 cup water 2 quarts freshly popped corn
2 tablespoons vinegar 2 cups nut kernels
½ teaspoon salt

Boil the sugar, water, vinegar and salt until the sirup hardens when dipped into cold water, or until a candy thermometer registers 250° F. Add the vanilla, pour while hot over the popcorn and nuts, and mix well. When cool enough to handle, grease the hands and form into balls, or place in a deep layer in a greased pan, and cut into oblong pieces. When cold, wrap in waxed paper. If desired, 2 squares of unsweetened chocolate may be added to the sirup.

STANDARD WEIGHTS AND MEASURES

Avoirdupois Weight

(Used in weighing all articles except drugs, gold, silver and precious stones)

27 11/32 grains	1	dram
16 drams	1	ounce
16 ounces	1	pound
25 pounds	1	quarter
100 pounds	1	cwt.
20 cwt.	.....	} 1 ton
2000 pounds	.....	
2240 pounds	1	long ton

Dry Measure

(Used in measuring dry articles)

2 pints	1	quart
8 quarts	1	peck
4 pecks	1	bushel

Note: A bushel contains 2150.42 cu. in.

Linear Measure

(Used in measuring lengths and distances)

12 inches	1	foot
3 feet	1	yard
5 1/2 yards	.....	} 1 rod or pole
16 1/2 feet	.....	
40 rods	1	furlong
8 furlongs	1	statute mile
320 rods	.....	} 1 mile
or	.....	
5280 feet	.....	

Square Measure

(Used in measuring the area of surface)

144 square inches	1	square foot
9 square feet	1	square yard
30 1/4 square yards	....	} 1 square rod
or	.....	
272 1/4 square feet	.....	
160 square rods	1	acre
640 acres	1	square mile

Note: A perch is a square rod, and a rood is 40 square rods.

Land Measure

10 rods by 16 rods	= 1 acre
5 rods by 32 rods	= 1 acre
4 rods by 40 rods	= 1 acre
5 yards by 968 yards	= 1 acre
20 yards by 242 yards	= 1 acre
40 yards by 121 yards	= 1 acre
220 feet by 198 feet	= 1 acre
110 feet by 396 feet	= 1 acre
60 feet by 726 feet	= 1 acre
300 feet by 145.2 feet	= 1 acre
4840 square yards	= 1 acre

Cubic Measure

(Used in measuring things which have three dimensions)

1728 cubic inches	1	cubic foot
27 cubic feet	1	cubic yard
128 cubic feet	1	cord

Liquid Measure

(Used in measuring liquids)

4 gills	1	pint
2 pints	1	quart
4 quarts	1	gallon
231 cubic inches	1	gallon
31 1/2 gallons	1	barrel
2 barrels	1	hogshead

Apothecaries' Measure

(Used in compounding medicines)

DRY

20 grains (gr)	1	scruple
3 scruples	1	dram
8 drams	1	ounce
12 ounces	1	pound

FLUID

60 minims	1	fluid dram
8 fluid drams	1	fluid ounce
16 fluid ounces	1	pint
8 pints	1	gallon

Mariners' Measure

6 feet	= 1 fathom
120 fath.	= 1 cable length
10 cable lengths	= 1 nautical mile
5,280 feet	= 1 sta. mile
6,085 ft.	= 1 nautical mile

Kitchen Measures

40-50 drops	= 1 teaspoon
3 teaspoons	= 1 tablespoon
2 tablespoons	= 1 fluid ounce
16 tablespoons	= 1 cup
2 cups	= 1 pint
3 cups pastry, bread or graham flour	= 1 pound
3 3/4 cups whole wheat flour	= 1 pound
3 cups corn meal	= 1 pound
4 3/4 cups rolled oats	= 1 pound
2 cups lard	= 1 pound
2 cups butter	= 1 pound
2 2/3 cups brown sugar	= 1 pound
2 cups granulated sugar	= 1 pound
2 cups raisins (heaped)	= 1 pound
4 1/2 cups coffee	= 1 pound
8 to 10 average eggs	= 1 pound
1 square chocolate	= 1 ounce

TIPS ON FARM PAINTING

Two thin coats are always preferable to one thick coat. Three coats are better than two, and are worth the extra cost, especially on new wood.

The ideal time to paint is when the thermometer reads between 45° and 70°. Paint should never be applied at near-freezing temperatures, or to surfaces heated to high temperatures by the sun.



If you begin painting in the early morning, paint the east side of the building first, particularly in the spring and fall. The first sun will dry up any moisture left by fog or dew.

On very weatherbeaten surfaces, where the paint is gone completely add one half to one gallon of linseed oil to each gallon of paint for the first coat. Allow at least double the normal time for the paint to dry. For the best job, apply three coats, thinning the second coat with oil and turpentine and applying the third coat without thinning.

Adding turpentine makes paint easy to apply but reduces gloss and length of life. Use as little turpentine as possible.

Do not add varnish to outside paint in an effort to make it glossy. Varnish makes the paint hard to work and shortens its life.

A good way to mix prepared paint is to pour the liquid into another can and use a stout paddle to break up and soften the remainder. Then pour the liquid back in, a little at a time, while stirring thoroughly.



Soak new brushes in linseed oil overnight before using them. This will prevent the bristles from absorbing paint pigment and make the brush easier to clean.

Do not stand brushes in water or the bristles will become flabby. To keep brushes soft, suspend them in linseed oil, so that the tips do not touch the bottom of the container.



There is no positive method of figuring the amount of paint required for a building. On the average, one gallon of paint will cover about 700 square feet with one coat. This may vary greatly, however, depending on the condition of the surface. It is a good plan to keep records of the paint used on various buildings, as a guide to quantities required.

Here are two time-saving tricks for painting the trim on a house or building. If the trim is darker than the body, use the body paint on the trim for the first coats. The dark trim color will cover it for the last coat. When applying the last coat, carry trim as well as body paint up the ladder whenever the trim can be reached, so both trim and body can be painted.

Do not use caustic soda or lye as paint removers. Some of these chemicals may remain in the wood and destroy the new paint. If old paint cannot be removed with wire brushes and scrapers, soften it with a blowtorch and scrape it off. The blow torch must, of course, be used with great care.

Allow the first coat of exterior paint to dry at least three days, but not more than two weeks, before applying the second coat.

Paint will rarely last long on new yellow pine siding. This wood should be allowed to weather for a year before being painted.

Do not paint exterior cement unless you have had at least one week of warm weather since the last rain. Otherwise the cement may still contain moisture.

Never paint the inside of a wood silo. Paint would seal the surface and cause the wood to shrink.

WHERE AND HOW TO USE LIME

By Earl Jones, Extension Agronomist Ohio State University

Soil Conservation. The American people are appreciating more and more how much a rather shallow top layer of soil means to the nation. We are now thinking more about increasing and maintaining the productivity of our land than we ever did in the past and we have started to do something about it.

Hay the Key Crop. When we consider the problem of soil productivity, the hay crop becomes the key crop. Unless we grow good hay crops and plow down good sods we will not get very far in soil improvement programs. The farmers who have good yields of hay have good yields of the other rotation crops, and those who have low yields of hay have low yields of other crops.

Sweet clover may be grown for soil improvement when hay is not needed and on many farms clovers are grown for seed.

Plowing under good sods is the best known method of maintaining good soil tilth. We now depend on legume sods for most of the nitrogen for our corn and grain crops. In developing erosion control programs on sloping land, good hay crops are necessary and the land should be in hay at least half the time.

Liming as Needed Profitable. Omitting the technical details, we may say that liming, as needed, is a profitable practice unless there are serious leaks in other phases of the farm management program. The yields of all crops are increased and the quality of the hay and grazing crops is noticeably improved. We should not assume, however, that all soils respond to applications of liming materials or that liming alone maintains productivity.

Avoid Overliming. Crop yields may be reduced by overliming sandy soils where the same application would do no harm on silt loam or silty clay loam soils. Overliming any soil results in no profit and in some cases the yields may even be reduced. It is not possible to cover all possible situations in this article and farmers should know the recommendations for their soils and cropping systems.

Liming Programs Develop Slowly. In communities where the soils are generally acid, the most progressive farmers become dissatisfied with scattered stands of clover and try liming materials. They find they get better stands of clover so they lime the remainder of the farm, no matter what the difficulties are.

When to Apply Liming Materials. On very acid soils the first application of liming materials should be made so that some of the material will be in the surface soil where the clover and alfalfa seed start to grow. This means an application after plowing and before or after preparing the seedbed for wheat or oats. If this cannot be done, the application should be made as soon as possible after grain is seeded.

On land limed in the past and where the soil is only slightly acid, the application is best made during the summer or fall on the sod field that is to go to corn the next spring and part of the first application on very acid soils may be made in this way. Spreading on sod fields is the easiest and most economical method of spreading and should be encouraged.

What Soils Need Lime. Your county agricultural agent knows what soil types in the county need liming. He can make soil tests or send soil samples to the laboratories of the Agricultural College for testing. Often the experiences of successful neighbors will help. If lime is needed an adequate program should be gotten into operation as soon as possible. If the necessary application can be applied at one time the complete benefits will be realized sooner than when several rotations are necessary to reach the desired goal.

Local Agent—The Key Man. Active local agents who appreciate what the use of liming materials means to the community are needed everywhere to get a desirable liming program in operation.

Amount and Kind of Lime Needed. The amount of lime needed for clover and alfalfa cannot be stated exactly without testing; any other method is just a

guess. However, too much is seldom applied. If the soil needs any lime at all it will most likely need as much as 1 to 1½ tons of limestone per acre. Some extremely acid soils will need as much as 4 to 5 tons.

Natural lime losses are so large that it is rarely wise to apply enough lime at one time to last for several rotations. Heavy liming is costly and on the lighter soils may make other minerals less available.

Reasonably fine limestone is essential for legumes. About one-half of it should pass through a 100 mesh to the inch sieve and all of it should pass through a 10-mesh sieve. Coarser limestone should be applied in larger quantities, so that each acre receives at least half its requirement in 100-mesh material. It is the finer material that corrects acidity quickly.

Other Fertility Practices. The other necessary practices in maintaining or improving the productivity of the soil must not be neglected. The adequate use of fertilizers in a good rotation, erosion control as needed, drainage, proper care and use of manure, etc., must be given consideration.

The Community Benefits or Losses. The community is benefitted when the productivity of its farms is on a satisfactory level and the community suffers when soil productivity declines. Everyone should be interested in the maintenance of soil productivity.

Bankers Interested. The full benefits from the use of liming materials are often

not completely realized for a few years or until the rotation is completed. Some bankers will loan money to farmers to buy liming materials, taking a note payable in installments over a period of four to five years as the returns are realized on the investment. Bankers and other local business men can look over the local situation and determine whether the local sales program for liming materials is adequate. There may not be a satisfactory delivery and spreading program.

The benefits to be gained from liming acid soils vary throughout the country. The following table indicates the gains in an ordinary field crop rotation on an acid silt loam soil.

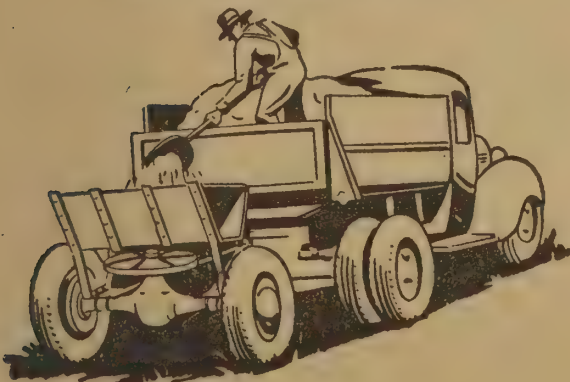
Liming Acid Soils—Effect on Crop Yields
Ohio Agricultural Experiment Station, Wooster, Ohio

**5-year rotation—
corn, oats, wheat, clover-timothy, timothy**

	Average yields per acre, 1917-1931	
	Unlimed	Limed
Corn	23.6 bus.	45.8 bus.
Oats	36.0 "	49.0 "
Wheat	17.7 "	27.9 "
Clover-timothy	1288 lbs.	3405 lbs.
Timothy	1496 "	3864 "

These figures show very definitely the decline on the unlimed land. We now know that the yields on the limed land would have been noticeably higher if the rotation and fertilizer program had been more adequate and if soil erosion had been less serious.

**SPREADING LIME
EFFICIENTLY**



Much time and labor can be saved if limestone is delivered by truck and distributed by a spreader of the type illustrated. Such a spreader may be obtainable from your implement dealer. Or you can construct one easily. It consists of an old automobile rear axle assembly. The drive shaft is cut off and a metal-covered table of plywood, with iron vanes, is fastened to the shaft near the housing. A hopper is built over the table. As the spreader moves forward, the drive shaft turns the table and spreads the stone shoveled into the hopper from the truck.



FROZEN STORAGE ...Home Unit or Locker?



Should farm families install a frozen storage unit or rely on a locker plant? Each family must calculate its own needs and arrive at its own answer to that question.

Begin with the fact that home storage units cost more, per cubic foot of space, than lockers. Then, add up the utility factors of the home unit and decide if they outweigh the lower cost of lockers, plus whatever services the locker plant offers.

Classes of Home Storage Units

To analyze home storage units, divide them into four classes. You can then decide which class of unit is best suited to your needs and consider its advantages.

CLASS I includes all domestic refrigerators having frozen storage compartments. These will supply a family of five for only a week or ten days. So they can be used efficiently only when close to a retail source of frozen foods or a locker plant. They would have some value to other families who haven't the space or the necessary funds to buy the larger sizes.

CLASS II consists of all small, separate, freezing and storage units. These permit freezing and storing some of the fruits and vegetables grown on the farm.

Products should be frozen just as soon as possible if freshness, palatability, and nutritive values are to be kept. This means special trips to town during the busy harvesting season. However, with **Class II** units, there is space to freeze 5 to 10 pounds each morning. At the end of the week the accumulated frozen food can be delivered to the bulk storage room or the locker plant.

Class II units hold about enough for a month's supply. Thus food can be purchased in semi-wholesale quantities if not produced on the farm. Or, if a locker plant is located within reasonable distance, trips to the plant may not be necessary more than once or twice a month.

Some people may have a refrigerator they don't want to exchange for one with a frozen-food compartment. Even though they don't want to freeze small quantities from the garden, they may want a frozen-

food compartment in the home. **Class II** units may be their solution. Or they can be used by those who want some storage space but must have the unit in the kitchen.

CLASS III units range in capacity from 8 to 24 cubic feet. These are useful if the family wishes to process and store poultry in addition to all their own fruits and vegetables. They will supply a family of three if refilled two or three times annually. The smaller sizes are not adequate for large families.

On the other hand, the larger cabinets in **Class III** call for a relatively heavy investment. Therefore, these units are more likely to be used where locker plants are not available or where locker rates are excessive or service unsatisfactory.

However, in making the choice between a small unit and the large unit which would store the entire family needs, other factors must be weighed. For instance the larger units will hold temperatures longer, in case of power failure.

CLASS IV units are built into the basement or an outside building and are self-sufficient. Their large capacities give plenty of frozen food storage space, as well as the high temperatures for chilling meats, aging beef and lamb, holding fresh fruits, vegetables, eggs, and dressed poultry. All these products may be needed for home consumption, or the family may put them on the market.

Units of this class may be used by the larger operators who market their products. It will also be used by large farm, ranch, and plantation owners who feed a large number of people and have no locker plant nearby.

Disadvantages of this class include high original investment, difficulties in location and the lack of use for all space much of the year.

Analyzing The Classes

To decide on which of these several types of units would be most useful, consider these factors:

1. Number of persons to be fed from the unit. Generally, the larger the number the more practical the large size units.
2. The variety of farm products to be

frozen and stored. Thus, a wide variety of vegetables, fruits, poultry, and livestock, would require greater storage requirements than if limited to meats and one or two vegetables and fruits.

3. The availability of local locker plant space, the rates charged, the accessibility and the processing services rendered.

4. Whether the farm workers have the ability, time, and equipment to prepare their own products, particularly meats, for storage.

5. Whether they can afford to operate the Class IV 36-degree compartment to chill and age their own meats, and hold other fresh products temporarily for use by the family.

6. Whether a large part of the 36-degree compartment can be used to improve the sales value of fresh products marketed regularly.

7. The space available for the location and convenience of the unit.

Pros and Cons

Obviously, the greatest advantage of the home storage unit is its location right on the farm where the food is grown.

This assures better nutritive values in stored foods, eliminates or greatly reduces the cost and the time needed for trips to the locker plant.

The greatest advantage of the locker plant is its lower cost per cubic foot of storage space, plus any useful services available.

The decision rests with each family. It will be based on the family's needs plus the relative cost and convenience of the various methods of meeting these needs. Those who require a lot of space either for their own use or to help in marketing their products may prefer the larger home units, and no longer use locker space. Others will find it better to use small home units in combination with space in a locker plant.

The table below gives facts about home storage units in the classes discussed. Costs are averages and may vary considerably in different localities. For comparative purposes, the final cost of home storage units should include any work done on the farm which would be done free at a locker plant. And the cost of lockers should include the cost of transportation to and from the plant.

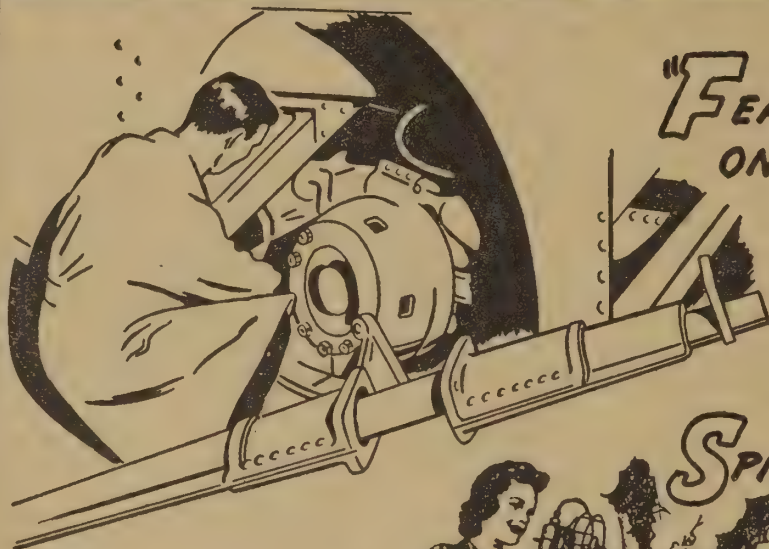
CLASSES AND ESTIMATED COSTS OF FROZEN STORAGE UNITS

	I Compartment in domestic refrigerator	II Small freezing and storage unit	III Larger farm freezing and storage unit	IV Combination freezing, stor- age & 36° unit
<i>Storage and Freezing Capacity</i>				
Zero degree storage, cu. ft...	1 to 3	4 to 7	8 to 24	30 to 70
Frozen storage capacity, based on 50% meat and 50% vegetables, lbs.....	20 to 60	110 to 192	220 to 660	825 to 1,925
Estimated or daily freezing capacity, lbs.	5	10	20	37
<i>Estimated Average Annual Operating Cost</i>				
Assumed average size in cu. ft.	2	5.5	16	50†
Assumed sales price.....	\$87.50*	\$200.00	\$400.00	\$1,150.00
Annual operating costs				
Depreciation at 10%.....	8.75	20.00	40.00	115.00
Interest on av. depreciated value at 5%.....	2.19	5.00	10.00	28.75
Power at 2.5c per K.W...	12.00	20.00	32.50	48.75
Total cost	\$22.94	\$45.00	\$82.50	\$192.50
Annual cost per cubic foot of storage.....	\$11.87	\$ 8.18	\$ 5.18	\$ 3.85
<i>Locker Rental Rates and Cost per Cubic Foot</i>				
Annual cost per cubic foot, assuming average rental rate of \$12.00 for 6.4 cubic feet.....				\$1.87
Annual cost per cubic foot at average rental rate, January 1, 1943—				\$1.59

*Added cost for frozen food compartment.

†Plus 120 cubic feet 36° space.

Rubberoddities—



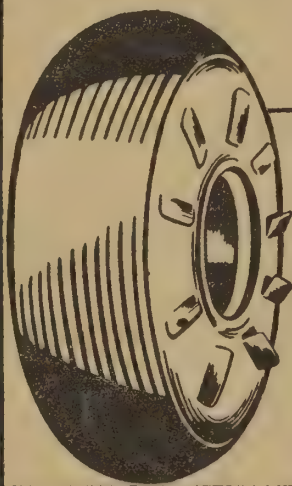
"FEATHER-BED" RIDING ON RUBBER SPRINGS

NEW RUBBER SPRING—A RUBBER-FILLED METAL CYLINDER DEVELOPED BY B.F. GOODRICH. ABSORBS ROAD SHOCKS THAT STEEL SPRINGS CAN'T "TAKE"



SPINNING RUBBER SPIDER WEBS

BEEES UPSET MANY FRUIT TREE "BREEDERS" PLANS BY CROSS POLLINATION UNTIL B. F. GOODRICH HELPED DEVELOP A "SPIDER WEB" RUBBER SPRAY AS A BLOSSOM PROTECTOR



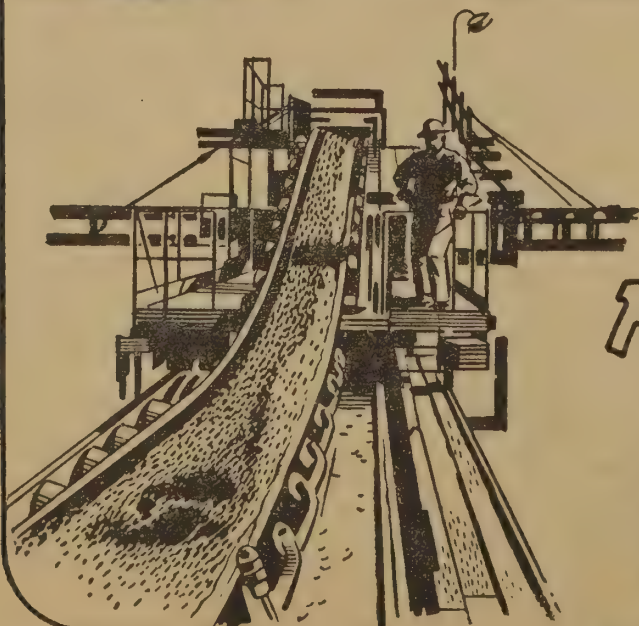
THE TIRE THAT SPROUTS WINGS

WHEN AIRPLANE WHEELS ARE LOWERED IN AIR, RUBBER VANES OF THIS NEW B.F. GOODRICH TIRE OPEN; AIR PRESSURE SPINS TIRES, GREATLY REDUCING SHOCK AND TIRE WEAR



"GRANDDADDY" TIRE AND TUBE

AFTER 28 YEARS, A B.F. GOODRICH 32 x 4 1/2 TRUCK TIRE AND TUBE WERE STILL IN USE BY A MICHIGAN FARMER



RUBBER ROLLER COASTER

B.F. GOODRICH DEVELOPED NEW-TYPE RUBBER BELT THAT ABSORBS SHOCKS—FOR CONVEYOR SYSTEMS THAT CARRY MOUNTAINS OF SAND, ROCK, UP-AND-DOWN HILLS

POOR RICHARD'S SAYINGS

(Written by Benjamin Franklin in his "Poor Richard" Almanacs)

Content makes poor men rich; Discontent makes rich men poor.

Dost thou love life? Then do not squander time; for that's the stuff Life is made of.

Good sense is a thing all need, few have, and none think they want.

Time enough always proves little enough.

In a discreet man's mouth a public thing is private.

Do not do that which you would not have known.

When reason preaches, if you don't hear she'll box your ears.

Teach your child to hold its tongue, he'll learn fast enough to speak.

If you'd have a servant that you like, serve yourself.

The worst wheel of the cart makes the most noise.

Blessed is he that expects nothing, for he shall never be disappointed.

Hear no ill of a friend nor speak any of an enemy.

You may delay, but Time will not.

Content is the Philosopher's Stone, that turns all it touches into gold.

He that complains has too much.

Beware of little expenses: a small leak will sink a great ship.

The busy man has few idle visitors; to the boiling pot the flies come not.

At twenty years of age the will reigns; at thirty the wit: at forty the judgment.

It's the easiest thing in the world for a man to deceive himself.

There's a time to wink as well as to see.

No man e'er was glorious who was not laborious.

Drive thy business, or it will drive thee.

The things which hurt, instruct.

A poor example is the best sermon.

Work as if you were to live one hundred years, pray as if you were to die tomorrow.

He that would catch fish must venture his bait.

One today is worth two tomorrows.



Be civil to all; sociable to many; familiar with few; friend to one; enemy to none.

Approve not of him who commends all you say.

To be humble to superiors is a duty; to equals, courtesy; to inferiors, nobleness.

A learned blockhead is a greater blockhead than an ignorant one.

He that lieth down with dogs shall rise up with fleas.

Search others for their virtues, thyself for thy vices.

The rotten apple spoils his companion.

Wish not so much to live long as to live well.

Since thou art not sure of a minute, throw not away an hour.

If thou hast wit and learning, add to it wisdom and modesty.

The noblest question in the world is, What good may I do in it?

When prosperity was well mounted, she let go the Bridle, and soon came tumbling out of the saddle.

Ignorance leads men into a party, and Shame keeps them from getting out again.

Success has ruined many a man.

Would you live with ease, do what you ought, not what you please.

Tell me my faults and mend your own.

Nothing dries sooner than a tear.

An honest man will receive neither money nor praise that is not his due.

Laws too gentle are seldom obeyed; too severe, seldom executed.

Be always ashamed to catch thyself idle.

HINTS ON GUN CARE

Keeping the bore clean, free from lead fouling and rust, is undoubtedly the most important part of caring for any firearm. Other parts can be replaced if necessary, but a damaged bore is impossible or extremely expensive to repair or replace.

Clean firearms as soon as possible after use. First pour or pump hot water through the bore. Follow with a brush (or shotgun cleaner) to remove lead fouling. Finally, dry the bore with clean patches and apply a light film of gun oil.



Lead fouling which resists a brush can be removed by filling the bore with mercury, after plugging the breech. Let it stand for one hour, inspect and repeat if necessary.

Oiling protects against rust only for ten days to two weeks. The gun should then be re-oiled, or gun grease applied to protect it for several months. Do not fill the bore with oiled rope or any patented device. This only hides possible damage.

The best cleaning rod is a straight steel rod with a handle for turning (unless for shotgun use). Various tips are available. The important thing is that the patch of medium weight flannel should require a stiff push to shove through the bore.

Never clean any firearm from the muzzle end. To do so may cause inaccuracies in shooting.

Many gun owners like to tinker with sights. The only danger in this (aside from spoiling your shooting) is that the gun barrel may be bent, particularly in removing sights which must be driven from dovetail slots. Clamp the barrel firmly in a vise close to the sight and support the whole barrel solidly. It is easier to bend a barrel than you imagine.

A badly marred gunstock can be refinished quite easily. The original finish is

first removed with paint remover (if necessary) and sandpaper. The wood is then re-stained and dents filled with stick shellac. A fine rubbed oil finish is simply a matter of rubbing successive coats of linseed oil (or two parts linseed oil to one part turpentine) into the wood until the desired gloss is obtained. Lacquer may also be used as a finish, but varnish or shellac make poor finishes.

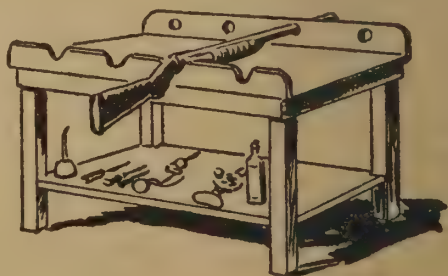


Jerking shotguns open causes loose actions. If actions do not work freely, disassemble and remove dirt by soaking in kerosene and using a stiff brush. Oil lightly and reassemble.

Pulling the triggers or snapping the hammers of any firearm wears the mechanism and may damage firing pins or other parts. If it is necessary to pull the trigger in testing or adjusting the gun, use a dummy cartridge or snap cap to prevent damage.

Leaving shotguns or handguns cocked for long periods weakens the mainspring. In addition, the practice of leaving a gun cocked is a dangerous one.

The springs in any firearm should be checked occasionally. If worn or defective they may cause improper action or misfires and should be replaced. Filing or weakening springs to reduce trigger pull will not accomplish the purpose but will damage the spring.



A handy gun cleaning rack can be made of scrap lumber, as illustrated. It can hold one or several guns, and drawers or shelves can be added to hold cleaning appliances and materials, if desired.

THE USE AND CARE OF ELECTRIC MOTORS

An electric motor uses less than 10 cents worth of current per hour, on the average. Its first cost is not high and it will last for years. It will run indefinitely, uses no power when not running, does several times the work of a man. That is why modern farmers use many electric motors.

Types of Electric Motors

Electric motors can be classified by the kind of current they require. *Direct Current Motors* are made for all general farm purposes. *Three Phase Motors* are rarely used on farms, as this is an industrial current. *Universal Motors* use either alternating or direct current but are always built into a machine, as a vacuum cleaner or electric drill.

Single phase alternating current is the most common in this country. Three kinds of motors are available which use it:

Split Phase Motors—economical in first cost—usually only up to $1\frac{1}{3}$ h.p.—for light starting loads, such as washing machines, grinders, small power tools.

Condenser (Capacitator) Motors—commonly up to $\frac{3}{4}$ h.p. only—start heavier loads with less current—used where frequent starting and stopping is necessary, as in automatically controlled pumps and blowers.

Repulsion-Induction Motors — heavy duty motors for starting heavy loads—made up to 10 h.p. but over 5 h.p. is unusual.

About 1800 R. P. M. is the most common motor speed. It is an advantage to buy motors of this speed. They usually cost less, are carried in stock, are more quickly repaired, and are more readily interchangeable in use.

Care of Electric Motors

Normally electric motors need little care beyond oiling and cleaning. Oil motors only at oil holes or cups with a few drops of light oil. Do not oil armatures or inside parts. Excess oil inside a motor may damage insulation. Some modern motors are made with sealed bearings and require no oil.

Motors operated under dusty conditions, particularly in the presence of abrasive or metal particles, should be cleaned regularly. This may be done by blowing air through them with a vacuum cleaner or taking them apart and wiping all sur-

faces lightly with a gasoline saturated cloth. This last should be done anyway, if the inside of the motor becomes greasy and gummy. Some small motors are completely enclosed and do not require internal cleaning.

A common cause of damage to motors is excessive heating due to overloading. Most modern motors have thermal overload devices. These may be built into the motor and appear as a button, switch or fuse, or the device may be separate. If your motors are not so protected, it would be wise to purchase and install thermal overload switches. They are economical motor insurance.

Do not confuse overload heating with normal operating temperatures. Electric motors may become quite warm when run continuously with full loads in a confined space. This is no cause for worry if the motor is protected with a thermal overload switch.

Motors which have been immersed in water or soaked with rain, should not be run until they have been thoroughly dried out. They can be left to dry in the air for several days, or dried in a few hours by placing them in an oven. Leave the oven door open and do not heat the motor to the point where it is uncomfortably hot to the hand.

Motors which are not in use should be stored in a clean dry place. Extremes of cold and heat may cause them to "sweat," and possibly damage them.

If motor fails to start, check fuses and line to make sure power is reaching motor. Check thermal overload switch or fuse on outside of motor (if any). If power is reaching motor but motor will not start, hums without starting or sparks excessively—

If motor has brushes, remove brushes, clean, replace if defective. Clean armature with fine sandpaper.

Split Phase or Repulsion-Induction Motors—Take motor apart and examine centrifugal switches. Clean contact points and lightly oil joints or hinges, wiping off excess.

Condenser (Capacitator) Motors—Condenser units may have failed. Have them tested by electrical dealer.

Do not attempt extensive repairs. You may waste many dollars trying to save a few.

PROPER CARE FOR BATTERIES



Proper care prolongs storage battery life . . . saves time, trouble and money by protecting against an unexpected failure.

The care of storage batteries is a simple and easy matter. But care must be given at regular intervals for full protection against an unexpected battery failure in your car or tractor. Here is all you need to do:

1. Clean the top of the battery with a stiff brush to remove dirt and corrosion.

2. Test the solution in each cell with a hydrometer to determine its condition. A hydrometer reading of 1.270 or higher indicates that the battery is fully charged.

A reading of 1.225 indicates half discharge. When the reading is 1.225 or lower, the battery must be recharged to avoid damage to the plates. Have the electrical system inspected if the hydrometer reading of the battery is found to be consistently low.

3. Check the water level of your car battery each week or every 1,000 miles. Check the water level of your tractor battery every day when the tractor is in constant use for long periods of time. Fill each cell with pure water to $\frac{1}{4}$ inch above plates, if the liquid level is low. Be sure to guard against overfilling.

4. Inspect cables and terminals. Tighten loose cables or terminals to avoid trouble. Replace broken or worn cables at once. Use a solution of water and soda to remove any corrosion remaining on the terminals. Corrosion affects the terminals and eats away the cables.

5. Grease outside of terminals with vaseline or petroleum jelly . . . making sure that all corrosion has first been removed.

6. Make sure battery cradle and hold-down rods are tight so that damage to the battery and cables is prevented.

Take care of your car or tractor battery and you reap a bumper crop of power for your starting and lighting needs. Neglect your battery and trouble is sure to come.

Koroseal ... THE MAGIC FABRIC

Koroseal is the B. F. Goodrich flexible material made of limestone, coke, and salt (contains no rubber). It's resistant to water, air, sun, grease, oil, and wear—comes in almost any color or form. Write

for the new free, full color catalog showing how Koroseal may be used. Ask for Koroseal booklet No. AL-46. Address your request to The B. F. Goodrich Co., Akron, Ohio.

Typical Koroseal products may include:



Baby's bath tub
Baby pants
Women's handbag
Raincoats
Washable lampshades
Awnings
Washable wall paper
Bow! covers
Garment bags
Waterproof luggage
Soles that outlast leather
Kitchen and bathroom
curtains
Weatherproof lawn
furniture
Rotproof, waterproof tents



SPOT AND STAIN REMOVERS

Most spots and stains can be removed without difficulty in the home laundry.

Here are five basic rules:

1—Act quickly. Stains are easier to remove when they are fresh.

2—Try lukewarm water before using any chemical remover. The directions below are for use after water has failed.

3—Before you use any chemical, particularly on colored material, test it on a small hidden edge of the piece to make sure it will not spot the material or run the color.

4—Keep a bottle of B. F. Goodrich Spot Remover on hand. This new chemical cleaning fluid brushes spots away easily and quickly. The self-feeding mohair brush top is always ready for instant use.



5—The directions given below have been tested thoroughly, but, because of the many synthetic materials and colors now sold, they cannot be guaranteed. If you stain a very valuable piece, it is recommended that you send it to a professional cleaner.

BLOOD—Soak in cold water, then wash with neutral soap and tepid water. Or spread on cold starch paste, allow to dry and wash. Stubborn stains may be removed from cotton or linen by soaking in a solution of sodium hypochlorite, and from silks or wool by sponging with hydrogen peroxide.

CHOCOLATE AND COCOA—Try soaking in borax and cold water first. If this doesn't work try sponging with B. F. Goodrich Spot Remover or benzine.



COFFEE OR TEA—Try hot water first, then bleach, if necessary, with lemon juice or cream of tartar. A stronger bleach is sodium hypochlorite for cottons or, for

woolens and silks, hydrogen peroxide. If colors are apt to run, use only tepid water followed by neutral soap and weak ammonia solution. If grease remains, use B. F. Goodrich Spot Remover or benzine.

CREAM, ICE CREAM AND MILK—Soak in cold water, then launder with neutral soap and warm water. If grease remains, use B. F. Goodrich Spot Remover or benzine.

EGG—Soak linens or cottons in cold water, then launder. Rub silks with table salt or sponge with cold water, then apply B. F. Goodrich Spot Remover.

FRUITS—Lemon and citrus fruit juices should be sponged with clear hot water and then with a weak solution of ammonia. Treat other fruit juice stains as directed for coffee.

GRASS—Soak stain with kerosene, then brush out with B. F. Goodrich Spot Remover, gasoline or alcohol.



GREASE, OILS—Lay on blotting paper and sponge with gasoline, B. F. Goodrich Spot Remover or benzine. To prevent the grease from spreading on

silks, circle with French chalk or fuller's earth.

INK—Often difficult. Try cold water first. If unsuccessful try B. F. Goodrich Spot Remover, alcohol, ammonia or weak oxalic acid over a blotter or absorbent material.

IRON RUST—Wet with lemon juice and salt or use weak oxalic acid.

MEDICINE, IODINE—Sponge with clear water, then use alcohol or ammonia.

MILDEW—Impossible if fabric is damaged. Otherwise wash in cold water and bleach with sodium hypochlorite (cotton or linen) or hydrogen peroxide (silk or wool).

PAINT—Sponge with Goodrich Spot Remover, benzine, or gasoline.

PERSPIRATION—Wash with warm water and soap. Bleach as for coffee, if necessary.

SHOE POLISH—Try neutral soap and water, turpentine or alcohol.

TAR, PITCH—Wash with benzine or naphtha soap, then soak with turpentine, or B. F. Goodrich Spot Remover.

VASELINE—Sponge with kerosene or turpentine.

WAX—Scrape off as much as possible. Sponge with benzine or gasoline over blotting paper or absorbent material.



**"YOU SURE PICKED YOURSELF A JOB -- TRYIN' TO MAKE
THAT OLD CAR OUTWEAR THOSE B.F. GOODRICH TIRES**

COMMODITY WEIGHTS & MEASURES

The following weights are accurate enough for general use in business.

APPLES: 1 barrel = 150 lbs. = 3 bushels.

BEEF: 1 barrel = 200 lbs.

CEMENT: 1 barrel (4 bags) = 376 lbs.

COAL: 1 bushel = 80 lbs. or 1 bag = 100 lbs.

CORN: (ear) $2\frac{1}{4}$ to $2\frac{1}{2}$ cu. ft. = 1 bushel.

COTTON: 1 bale = 480 lbs.

CREAM: 1 gallon = 8.4 lbs.

EGGS: 30 doz. crate = 55-60 lbs.

FISH: 1 barrel = 200 lbs.

FLOUR: 1 barrel = 196 lbs.

GASOLINE: 1 barrel = 55 gallons = 363 lbs.

GRAVEL: 1 cu. ft. = 95 lbs.

HAY: Standard bale = 210 lbs.

Small bale = 120 lbs.

ICE: 1 cu. ft. = 56 lbs.

KEROSENE: 1 barrel = 385 lbs. or 1 gallon = 7 lbs.

LIME: 1 barrel = 320 lbs. or 1 bushel = 75 lbs.

MILK: 1 gallon = 8.6 lbs. or $46\frac{1}{2}$ qts. = 100 lbs.

MOLASSES: 1 barrel = 650 lbs.

NAILS: 1 keg = 100 lbs.

OIL (fuel): 1 barrel = 42 gallons (Approx. 8 lbs. per gallon).

PORK: 1 barrel = 220 lbs.

SALT: 1 barrel = 280 lbs.

SAND (dry): 1 cu. ft. = 110 lbs.

SHINGLES: 1 bundle (about 250) = 50 lbs.

STRAW: Standard bale = 180 lbs.

SUGAR: 1 barrel = 350 lbs.

TURPENTINE: 1 barrel = 432 lbs. or 1 gallon = 7.2 lbs.

WATER: 1 cu. ft. = $62\frac{1}{2}$ lbs. = $7\frac{1}{2}$ gallons. 1 gallon = $8\frac{1}{3}$ lbs.

WOOD: 1 cord = 128 cubic feet.

FACTS ABOUT TRACTOR TIRE TRACTION

By P. W. Stansfield, Mgr. B. F. Goodrich Farm Service Tire Sales

Nearly all of you tractor owners who read this know something about machinery. You know, without even stopping to think about it, that the more traction your tires give you, the less they slip, providing a steadier pull, which means you can do more work in the same amount of time, and with less fuel consumption.

You also know at a glance that all tires aren't the same. Some have bars; some have buttons; some have tricky combinations of both. Which kind is best?

Well, finding out about that is just like studying any machine. Look at a B. F. Goodrich tread. It's better to study the tire itself, but if you don't have one, look at the picture on the opposite page.

Cleats Designed in Pairs

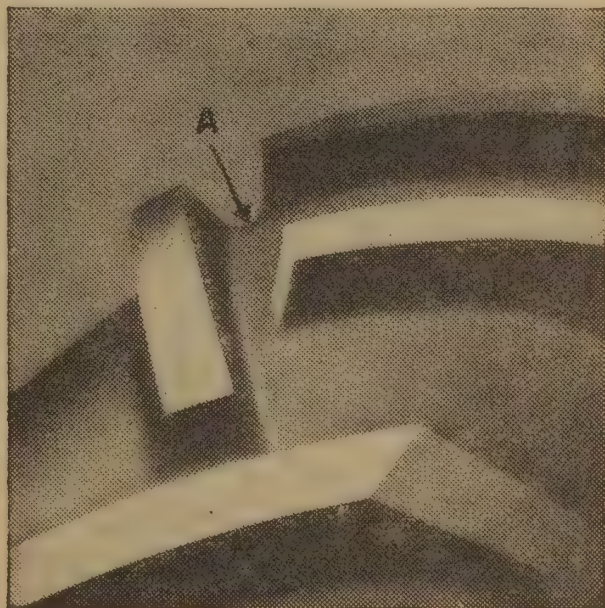
High cleats, of course. But note that those cleats are *in pairs*. One is long and one short; then there's another long and short on the opposite side. The *long* cleat crosses the center; the short one is a *shoulder* cleat. (See illustration.)



Now this is just a matter of ordinary mechanics. Notice the cleats are not connected with each other. This allows the cleats to push down into the soil easier and deeper, and to cut through cover

crops. You get a firm, even grip from shoulder to shoulder. At the same time the tread is open and self-cleaning. You get in this tire all the advantages of self-cleaning tread plus the added advantages of deep bite and even grip. If you have any question whether that makes a better pulling tire and speeds up tractor operation, ask anyone who uses B. F. Goodrich tires.

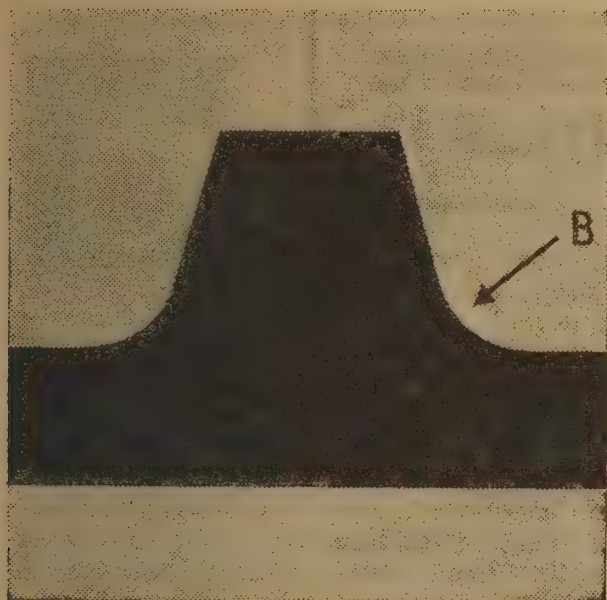
Without these B. F. Goodrich features you may still get good tires. They may wear well, may keep your tractor operating smoothly year after year. But, if you *do not* have the B. F. Goodrich tread your work is bound to be just a little slower; you'll lose a little more time whenever you have a hard pull; and you may have to add more *weight* to get the same traction you'd have with B. F. Goodrich tires. (More weight increases the traction of any tire, but the *less weight* you add the less power it takes to carry the weight around your fields. That's one way B. F. Goodrich tires save you money.)



After study and development work like this is it any wonder that B. F. Goodrich tires have extra traction? Is it any wonder that you can do your work faster and cheaper when your tractor has B. F. Goodrich tires?

Note;
PAIRED
CLEATS





Height of Cleats Important

Another point: The height of the cleats on B. F. Goodrich tires has been determined to the hundredth of an inch. It was done through those same experiments with farmers and rubber experts working together. Cleats must not be so high as to bend over, because that would reduce the depth of the penetration. They must be wide enough to give strength, but not too wide, because if they were too wide, it would reduce the depth of the bite. It's the same with *direction* of cleats. They mustn't run lengthwise too much. That would reduce the *pull*. They mustn't run crosswise too much because they wouldn't clean as easily. Packed mud or dirt would reduce the traction. And the cleats must be spaced just the right distance apart for maximum traction.

Users can tell you

Read on page 51 what some farmers say about these B. F. Goodrich features. Every one of those comments is a sincere, voluntary expression written to The B. F. Goodrich Company by a successful farmer and tractor owner. Most of these farmers have said they invite other farmers to write them about their experience with B. F. Goodrich tires if they wish.

How About Synthetic Rubber?

All tractor tires are now made of synthetic rubber. B. F. Goodrich has had more experience with synthetic rubber than any other tire manufacturer.

B. F. Goodrich made and sold auto

tires containing synthetic rubber three full years before any other company, and also made the first *tractor* tires with synthetic rubber.

All B. F. Goodrich farm tires are now made with a new kind of synthetic rubber. This rubber is far superior to ordinary synthetic in tread wear and in resistance to cracking and chipping. Soap is used in making synthetic rubber. B. F. Goodrich discovered how to make a better rubber with rosin soap from pine stumps.

More Information

The B. F. Goodrich dealer whose name is printed on the back of this book is especially interested in *tractor tires*. He and his men have special knowledge about them too. They can give you or get for you the answers to any questions, help you settle arguments or even get technical information if you want it. They give you *complete* tractor tire service, help you get the most out of your tires and out of your tractor itself.

Make their store your headquarters when in town. You're welcome to drop in for minutes or hours, summer or winter. Please take this as AN INVITATION from men who want to be your good friends—your B. F. Goodrich dealer.

How B. F. Goodrich Studied Farmers' Problems

Now here are some extra facts for the "farmer, engineer", or anyone who has made a special study or hobby of mechanics. Look at the curve at the end of the cleat (marked A in the picture shown on page 31) and the curve marked B in the cross-section picture, page 33, at the side of the cleat.

Those "cleats" were designed scientifically as the result of hundreds of experiments. Farmers and technical rubber men worked together. Tires with different tread designs were made and tested under all kinds of farm conditions. When the right tread design was found, here's what we had: cleats that would give deep penetration and yet were strong enough so they wouldn't tear off or crack at the bottom. That was the problem—*bite* without *strain*. Only by studying the farmers' own problems could we get *bite* in a tread and still have tires that would *wear* for years.

THE LIQUID WEIGHTING OF TRACTOR TIRES



By H. W. Delzell, Field Engineer, Farm Tires,
The B. F. Goodrich Company, Akron, Ohio

The addition of weight to the tire through the use of water or a calcium chloride anti-freeze solution is endorsed by all tire manufacturers.

The big question in the minds of many farmers today is one of how much liquid to use to obtain desired results in terms of increased pulling power and economical tire performance.

To begin with . . . additional weight will increase the amount of traction delivered by any tractor tire—*regardless of tread design or make*. However, there is this important point for every tractor owner to keep in mind: The increase in drawbar pull obtained by weighting with liquid will be greater for the tire having good built-in traction before adding weight, than for a tire with less built-in traction.

For example: A tire such as the B. F. Goodrich Hi-Cleat will give all of the traction required to do all of the jobs on practically any farm when 75% filled with liquid—assuming that this additional weight is needed at all. But a tractor tire having less built-in traction than the B. F. Goodrich Hi-Cleat may require a greater amount of liquid weight to obtain the same results.

The farmer who must have a solution-fill of more than 75% to obtain adequate traction from his tires pays a high price in terms of harder riding, increased tractor up-keep, driver fatigue, and shorter tire life.

An Air Chamber Must Exist to Get Easier Riding, Longer Tire Life

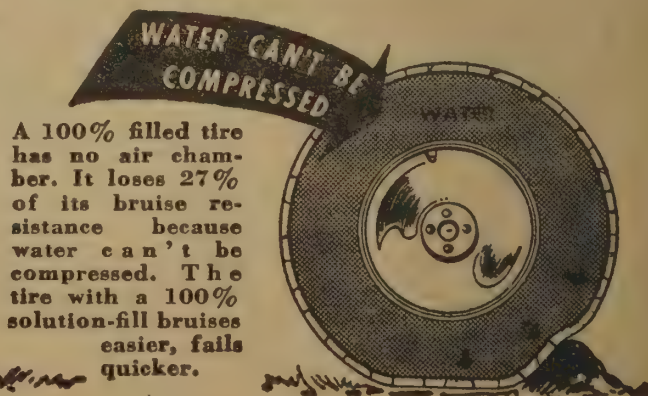
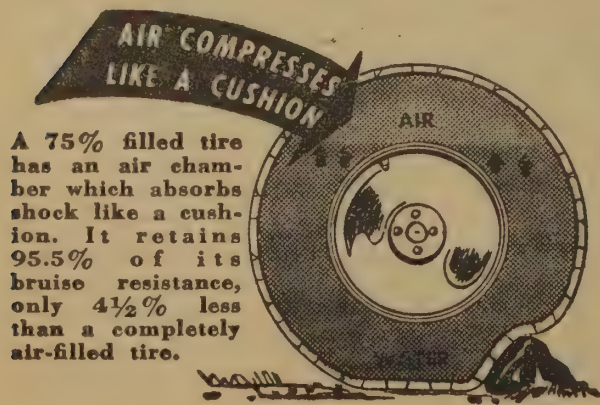
It is easy to see that you must have an air chamber if the liquid-weighted unit is to retain the basic principles of a pneumatic tire—easier riding because of maximum cushioning . . . longer life because of greater flexibility and bruise resistance.

For example: A tire filled 100% with solution has no air chamber. Because water can't be compressed, the tire cord body must take the entire shock. The tire will break more easily when striking a rock or other obstruction. In fact, tests prove that a 100% solution-filled tire will bruise 29% easier than a tire 75% filled with liquid. Reason? Because the 75% liquid-filled tire has an air chamber which cushions the shock—the tire remains more flexible, takes the "blow" with far less strain on the cord body.

B. F. Goodrich introduced and pioneered the method of weighting tractor tires with liquid. We have proved by extensive tests that adding liquid to tractor tires up to 75% gives all of the traction required.

How Much Liquid Should Be Used?

The answer to this question depends on several related factors. To name a few . . . the tread design of the tire and amount of built-in traction before adding liquid, the type of land farmed and con-



dition of the soil—wet or dry, loose or packed.

In general, however, tires should be sufficiently filled with liquid (up to 75%) to give enough traction to do the most difficult job on the farm with a minimum amount of slippage and fuel consumption.

New Electric Pump Liquid-Weights Tires Safely, Faster Than Ever Before

Many B. F. Goodrich dealers and stores now offer a new and modern kind of liquid-weighting service—a service made possible through the use of a specially designed electric pump.

With this pump . . . your B. F. Goodrich dealer or store can fill a 10-38 tractor tire in just 15 minutes—safely, conveniently, faster than ever before. In case of a recap or repair, the pump also removes the liquid completely. This means that farmers using calcium chloride in their tires can save the solution for use over again—this saving alone often paying for the cost of the repair.

This new pump is lightweight and can be transported to the farm in cases where emergency service is required.

In areas where this new and modern service is not offered, B. F. Goodrich recommends the liquid-weighting procedure outlined on page 37.

Let's Sum It All Up

The proper weighting of tractor tires with liquid gives farmers these advantages:

1. Better traction, more work done.
2. Less slippage and power loss.
3. More drawbar pull.
4. Slower tread wear, longer tire life.
5. Elimination of costly wheel weights.

A tire weighted up to 75% with liquid has an air chamber cushion which absorbs shock—giving the tire bruise resistance almost as good as an air-filled tire.

A tire having a 100% solution-fill has no air chamber. Impact is concentrated within a small area. The hazard of bruising is greater, normal tire life is reduced by almost 1/3.



THE MEDICINE MAN SAYS IT'S A NEW CHARM CALLED THE B.F. GOODRICH TIRE—CLAIMS IT MEANS LONG LIFE.

ANTI-FREEZE CHART

For Liquid Inflation of

B. F. Goodrich Farm Service Silvertowns

The use of liquid in tractor tires requires proper precautions in those sections of the country where freezing weather occurs.

If the tires are not drained before freezing weather, an anti-freeze solution

should be injected. Commercial (77-80%) flake calcium chloride has been found to be the most economical and practical anti-freeze for this purpose. The calcium chloride solution will not deteriorate the rubber and is readily obtainable in all sections of the country.

Solutions in tables below made with Commercial (77-80%) Flake Calcium Chloride. Protects to 25 below zero.

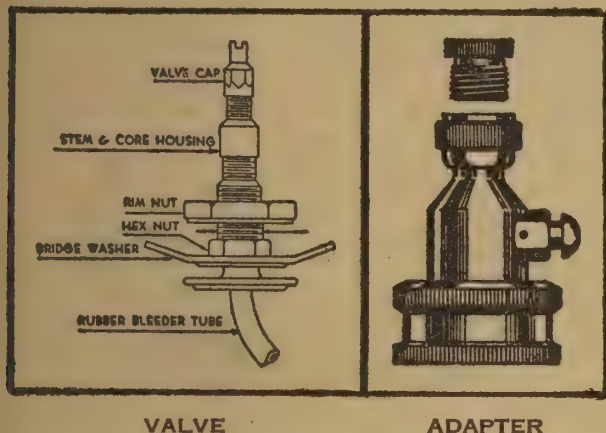
Never pour water on calcium chloride; add the flakes to the water, stirring until dissolved.

SIZE OF TIRE	SIZE OF RIM	WEIGHT OF SOLUTION POUNDS	LIQUID CAPACITY GALLONS	TO MIX SOLUTION USE	
				POUNDS CALCIUM CHL.	GALLONS OF WATER
6.00-22	4.50E	62	6.50	12.00	6.00
7.00-24	5.50R	105	11.00	19.50	9.75
7.50-24	5.50R	134	14.00	26.50	13.25
7.50-40	5.50R	203	21.50	39.00	19.50
9.00-24	6.00S	181	19.00	34.00	17.00
9.00-36	6.00S	276	29.00	53.50	26.75
9.00-40	6.00S	283	30.00	53.50	26.75
10.00-36	8.00T	379	40.00	73.00	36.50
11.25-24	8.00T	296	31.00	58.00	29.00
11.25-28	8.00T	334	35.00	65.50	32.75
11.25-36	8.00T	410	43.00	80.50	40.25
11.25-40	8.00T	440	46.00	84.50	42.25
12.75-24	8.00T	400	42.00	78.00	39.00
12.75-28	8.00T	434	46.00	84.50	42.25
12.75-32	8.00T	505	53.00	97.00	48.50
13.50-24	8.00T	435	46.00	84.50	42.25
13.50-28	8.00T	401	52.00	94.50	47.25
13.50-32	8.00T	567	60.00	109.50	54.75

For data on other than conventional tires, call or see us.

PRACTICAL METHODS OF LIQUID WEIGHTING TRACTOR TIRES ... without using a power pump

Tires equipped with B. F. Goodrich two-piece valves and bleeder extensions can be quickly filled with liquid to the proper level (never to exceed 75%) and then completely drained when desired. For example: Liquid can be injected for heavy work, such as plowing and discing, and then be removed for lighter operations, or before freezing weather occurs in cases where an anti-freeze solution is not used.



The use of an ordinary garden hose with valve adapter makes it a comparatively simple matter to water-fill tires from any source. In fact . . . this operation can be performed by any of the following methods: (1) A pressure tank in conjunction with a spark plug pump, or other source of compressed air. (2) A hand-operated pressure pump similar to the spraying type pump. (3) By siphon action from a tub, barrel or similar container. If siphon method is used the container should be about 6 or 8 feet above the tire valve level.

How To Inject The Liquid

1. Jack up tractor and place tube valve at top of wheel.
2. Remove core housing.
3. Attach garden hose equipped with adapter to valve stem.
4. Inject water from regular pressure line until filled to desired level.
5. Replace core housing and tighten swivel nut securely with thumb and fingers only—DO NOT USE PLIERS.

6. Inflate tire to recommended air pressure and attach valve cap.

How To Remove The Liquid

1. Place tube valve at bottom of wheel—do not jack up tractor.
2. Remove core housing—allow liquid to flow from tire. If you wish to retain the liquid, attach a garden hose and adapter and run the liquid into some suitable container.
3. Jack up tractor—to permit remaining liquid to gather at bottom of tire.
4. Attach small rubber tube to extension on core housing. Insert core housing (with rubber tube inside tire) in valve stem, then inject 35 pounds air pressure to force liquid through the valve.
5. Remove rubber tubing—insert valve core and inflate tire to recommended air pressure. DO NOT leave rubber tubing attached to core housing when tire is in regular service.

* * *

Important: Liquid weighting reduces the bruise resistance of tires. The following table shows the comparisons with a bruise-resistance rating of 100% for an air-filled tire:

Content	Bruise-Resistance Rating
Air-filled	100%
Liquid to valve level ($\frac{3}{4}$ full)	95.5%
Liquid . . . 9/10 filled (not recommended) ..	85.0%
Liquid . . . completely filled (not recommended) ..	68.0%

Electric Pump Speeds Weighting

A more convenient method of liquid-weighting tires is through the use of a specially designed electric pump. Such a pump has been developed by B. F. Goodrich, and what it means in terms of convenience to farmers is discussed on page 35.

CAKE AND COOKIE RECIPES



Quick Coffee Cake

- | | |
|--|---|
| 2 cups sifted flour | $\frac{1}{2}$ cup cut citron or other candied fruit |
| 3 teaspoons baking powder | $\frac{1}{2}$ cup raisins, chopped |
| 2 tablespoons sugar | $\frac{1}{4}$ cup chopped nuts |
| $\frac{1}{2}$ teaspoon salt | 1 teaspoon cinnamon |
| 4 tablespoons butter or other shortening | mixed with 2 tablespoons sugar |
| $\frac{1}{2}$ cup milk | |

Sift together the flour, baking powder, sugar and salt, saving out 2 tablespoons of flour to mix with the fruit. Cut in the butter with a biscuit cutter, and add the milk and floured fruit. In a greased pan, pat the dough down until it is about $1\frac{1}{2}$ or 2 inches thick, and bake for 35 to 40 minutes in a moderate oven (350° F.) When done, butter the top and sprinkle over it a mixture of the chopped nuts, cinnamon, and sugar. Place the cake in the oven again and let it remain until the sugar begins to melt. Serve hot or cold.

Caramel Cup Cakes

- | | |
|--|--------------------------------|
| 1 cup sugar and 1 cup hot water, for caramel sirup | 3 cups sifted soft-wheat flour |
| $\frac{1}{2}$ cup butter or other shortening | 4 teaspoons baking powder |
| $1\frac{1}{2}$ cups sugar | $\frac{1}{4}$ teaspoon salt |
| 2 eggs | 1 cup water |

Melt and brown the cup of sugar very slowly in a smooth skillet, add the cup of hot water, cook until a thick sirup and formed, and cool. Cream the butter and sugar together, add the beaten egg yolks, and beat well. Sift together the dry ingredients, add to the first mixture alternately with the water and 4 tablespoons of the caramel sirup, and fold in the beaten egg whites. Bake in greased muffin pans in a moderately hot oven (375° F.) 25 to 30 minutes and ice with caramel-flavored frosting.

Spice Cake

- | | |
|--|-----------------------------------|
| $\frac{3}{4}$ cup butter or other shortening | $\frac{1}{2}$ teaspoon salt |
| $1\frac{1}{2}$ cups sugar | $1\frac{1}{2}$ teaspoons cinnamon |
| 3 eggs | $\frac{1}{2}$ teaspoon nutmeg |
| 3 cups sifted soft-wheat flour | $\frac{1}{4}$ teaspoon cloves |
| 3 teaspoons baking powder | $\frac{3}{4}$ cup strong coffee |
| | 1 teaspoon vanilla |

Cream the butter and sugar together and add the well-beaten egg yolks. Sift together the dry ingredients and add alternately with the coffee to the first mixture. Add the vanilla and fold in the well-beaten egg whites. Bake in a greased tube pan for 1 hour in a moderate oven (350° F.) Ice with vanilla frosting.

Vanilla Frosting

- | | |
|-------------------------|--------------------------------|
| 1 cup sugar | $\frac{1}{2}$ teaspoon vanilla |
| 1 egg white | $\frac{1}{8}$ teaspoon salt |
| 3 tablespoons hot water | |

Place all ingredients in upper part of double boiler and have water in lower part boiling. Beat with egg beater for seven minutes. Spread on cold cake.



Scotch Wafers

- | | |
|-----------------------------|---------------------------|
| 2 cups rolled oats | 2 teaspoons baking powder |
| 1 cup sifted flour | 3 tablespoons fat |
| $\frac{1}{2}$ cup sugar | $\frac{1}{3}$ cup milk |
| $\frac{1}{2}$ teaspoon salt | |

Mix the dry ingredients, add the fat, and mix together thoroughly. Add enough milk to make a dough sufficiently hard to roll (about one-third of a cup). Knead this dough well, roll very thin, and cut with a biscuit cutter. Bake in a moderately hot oven (375° F.) for 15 to 20 minutes. When cool the wafers should be very crisp.

Orange Drop Cookies

- | | |
|----------------------------------|-----------------------------|
| 2 tablespoons grated orange rind | 4 tablespoons orange juice |
| 4 tablespoons butter | 2 cups sifted flour |
| 1 cup sugar | 4 teaspoons baking powder |
| 2 eggs | $\frac{1}{2}$ teaspoon salt |

Cream together the grated orange rind, butter, and sugar. Add the well-beaten eggs and orange juice, and the flour, baking powder, and salt, which have been sifted together. Drop the batter by spoonfuls onto a greased baking sheet and bake in a moderately hot oven (375° F. to 400° F.) for 10 minutes.

RULES FOR FARM TIRE CARE



greater the return to you. You can get the greatest possible return from your tires by observing these common sense practices.

1. *When you buy tires, choose the proper size*—based on the load they have to carry and the job they have to do. We will be glad to advise you.



2. *Keep your tires properly inflated at all times.* Air pressure should be checked at least every two weeks. Many farmers check tires every week or every 60 working hours. *Underinflation* causes deflection of the tire and results in faster-than-normal wear; it also allows the tire to slip on the rim, and this slippage, if excessive, will tear the valve out of the tube. *Overinflation* decreases traction, accelerates wear, causes harder riding, and leads to tire failure because of impact or penetration breaks. Proper inflation is even more important with synthetic rubber tires than with crude rubber tires.

3. *Keep your tractor under cover and jacked up when not in use for a long period of time.* When tractor is put back in service tires should be inflated to correct pressure. If water is used for wheel weight, be sure to add anti-freeze or drain before freezing weather begins.



4. *If a rear tractor tire contains liquid weight* extra attention should be given to maintaining correct air pressure. Because there is a small volume of air in the tire, a slight leak causes a much greater decrease in pressure than if the tire were 100% air-filled. Valve caps should be used always.

5. *Do not allow tires to rest in grease or oil,* because both shorten the life of rubber. After using your tractor for spraying, wash off any chemicals that may have accumulated on the tires.



6. *Inspect your casings regularly* for cuts, bruises, and other damage. Have any injuries in tires repaired promptly to check their further development. If any unusual wear is detected, consult us for help in tracking down and correcting the cause.

7. *Use reasonable care in driving,* especially on the highway, as tires will not last their normal life under constant, excessive abuse. Severe road shocks caused by striking curbs, chuckholes, or other obstructions, often result in rim bruises.



For helpful information and advice on tire care or other tire problems, see us.

FARM MEASURES AND RECKONINGS



To Measure Round Stacks

of average shape, measure vertical distance from ground to bulge (A) and add $\frac{3}{4}$ vertical distance from bulge to top (B); multiply this sum by circumference of stack at bulge (C) and multiply resulting product by circumference at ground (D). Dividing last product by 12 will give cubic feet, approximately.

Distance Traveled in Plowing 1 Acre

Miles

With a 10-inch plow the distance is .9.9
 With a 12-inch plow the distance is .8.2
 With a 14-inch plow the distance is .7.1
 With a 16-inch plow the distance is .6.2
 With 2 - 12" plows the distance is .4.1
 With 2 - 14" plows the distance is .3.5
 With 3 - 14" plows the distance is .2.4

A one-horse plow covers about 1 acre per day; a two-horse walking plow covers from $1\frac{1}{2}$ to 2 acres a day; gang plow, cutting 28 inches and drawn by four or five horses, with one man, covers from $4\frac{1}{2}$ to 5 acres per day. Which do you use?

Capacity of a Cistern

To find the capacity of a round cistern, find the distance across in feet and multiply this number by itself. Multiply the product by the depth in feet. To find the capacity in gallons, multiply this figure by $5\frac{7}{8}$; for barrels, multiply by .1865.

Period of Incubation

Kind of Poultry	Days
Hen	21
Pheasant	22-24
Duck	28
Duck (Muscovy)	33-35
Turkey	28
Peafowl	28
Guinea fowl	26-28
Ostrich	42
Goose	30
Pigeon	17

The period of incubation varies somewhat with conditions, so that a hatch may run one or two days over or under in some cases.

To Measure Contents of Bins

To measure wheat, oats, barley, rye, buckwheat or shelled corn in bins, multiply inside length and width of bin together, then multiply product by average depth of grain in bin. This gives cubic feet, which divided by 5 and multiplied by 4 gives approximate number of bushels.

Handy Conversion Table

Multiply	By	To Get
Diam. circle	3.1416	Circumference circle
Diam. circle	0.886	Side of equal square
U. S. gallons	0.1337	Cubic feet
Cubic feet	62.428	Pounds of water
U. S. gallons	8.336	Pounds of water

To get results in left column, beginning with right column, divide by center column.

To Compute Wagon Capacity

Multiply together length, breadth and depth in inches and divide by 2150; the result is the number of bushels of shelled grain.

Cubic Feet per Ton

Many factors affect the density of hay in the stack and therefore the number of cubic feet required for a ton of hay, but the figures in the following table, which are the averages obtained from a large number of stacks, can be used with fairly good results.

No. of Cubic Feet of Hay to the Ton

Kind of hay	Length of time in stack	
	30 to 90 days	Over 90 days
Alfalfa	485 cu. ft. per ton	470 cu. ft. per ton
Timothy and timothy mixed	640 cu. ft. per ton	625 cu. ft. per ton
Wild	600 cu. ft. per ton	450 cu. ft. per ton



Quantity of Hay in a Rick

To determine with reasonable accuracy the number of tons of hay in a rick of average shape, multiply the over distance in feet (A) by the width (B), then the length (C), and then by 0.37.



**YOU WOULDN'T HAVE ALL THAT SQUAWKIN', JOE...
BECAUSE THEM COWS WOULD FEEL SAFER IF YOU'D
DRIVE THAT TRUCK ON *B.F. GOODRICH TIRES***

SAFETY TIPS for Farm Workers

Each year 4,500 farmers lose their lives in work accidents. Many, many more are injured. Most of these accidents could be avoided by taking proper precautions. Here are some tips from the National Safety Council.

Make Your Muscles Work For You

For lifting heavy weights, bend your knees, not your back. Squat down with back straight and pick up the weight by straightening your leg and thigh muscles. This way, the strong muscles of your back and thighs take the strain of lifting. *Caution: Bending over and picking up a heavy weight by straightening the back may cause back strain or muscular injury.*

"A heavy load is a lazy load." Two trips with lighter loads may be quicker and easier than one back-breaking load. Whenever possible, use teamwork in lifting heavy loads. Learn your particular strength. Do not lift weights and objects too heavy for you.

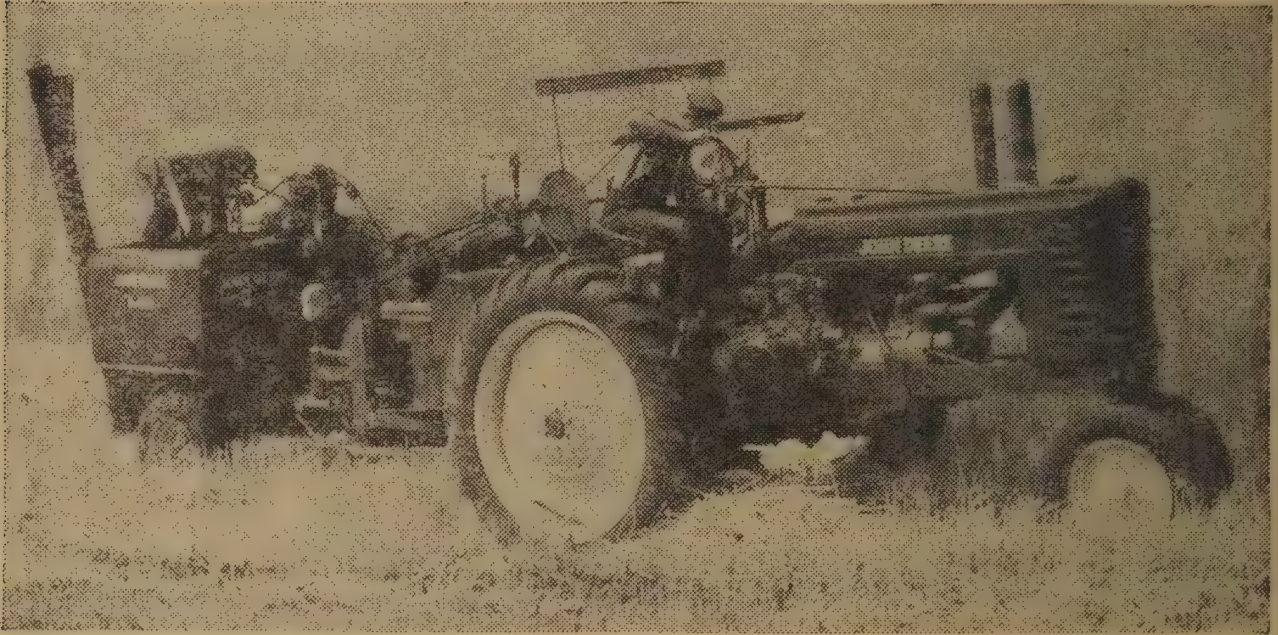
When Using Tools and Machinery HANDLE THEM RIGHT

Always, before using any machinery or tools, learn the right way from your farmer employer or field supervisor. Never learn to operate any machine by the trial and error method; play safe with machinery by following instructions.

Machines: Wear clothing with no loose ends to catch in the machine or trip you. Do not hitch loads to the tractor axle. Start a tractor smoothly; turn corners slowly to prevent tipping. Keep all safety shields in place. In operating any machine, stop the engine before filling the gasoline tank, and before making any adjustments.

Tools: Remember, a tool is an extension of yourself, like stilts you walk on. Such tools as pitchforks, rakes and axes, handled the *wrong* way can be dangerous; handled the *right* way, can safely help do an effective job. When not using hand tools, lean them firmly against a fence, building or tree, or stick them in the ground *tool-end* down. Never let them lie on or across walks, paths, and drives.

KEEP YOUR V-BELTS IN A-1 CONDITION



Repair and replacement part expense on combines, mowers, balers and other farm equipment can be greatly lowered by giving proper attention to the V-belt transmissions on these valuable farm machines.

When V-belts are too tight, bearings are apt to burn up or wear out quickly even when well lubricated, and the V-belt itself is stretched and weakened. V-belts that are too loose slip and slide easily under slight load increases resulting in belt cover wearing through prematurely. Tension is very important to V-belt life and to correct speed ratios between each pulley.

See that pulleys are lined up and running true. A warped or eccentric pulley

is always disastrous to V-belt life—practically shearing cover from carcass. Burrs and rough spots in pulley groove or along the rim have a similar effect. Pulleys with worn grooves should be replaced since old pulleys almost without exception give uneven traction—putting excessive strain on some parts of the V-belt.

Three elements especially hard on V-belts, but difficult to avoid on the farm are: grit, oil, and sunlight. Belts should be kept clean, free of oil and grease and protected from sunlight as much as possible.

When the combine, mowers, balers, etc., are put away for the season, all V-belts should be removed from the pulleys and stored in a cool, dry, dark place. If left on the machine, V-belts acquire a permanent “set” between seasons which greatly increases their chance of failure.

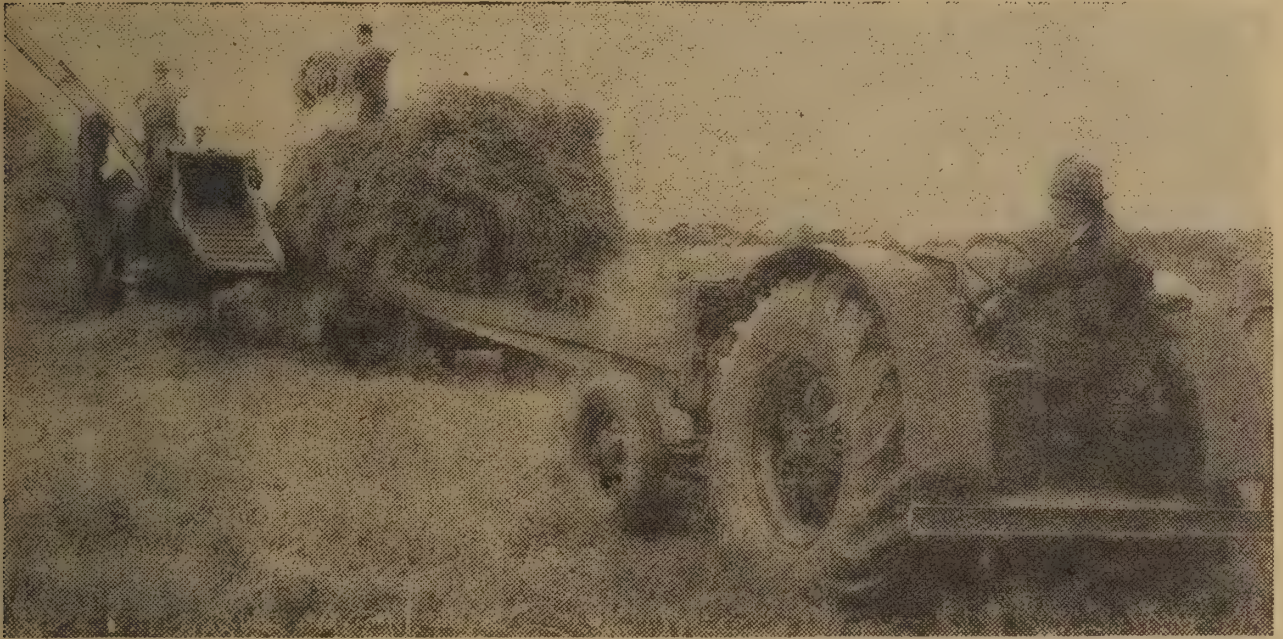
The best way to buy a replacement V-belt is to order it by the manufacturer's machinery part number. Substituting another belt that happens to be a fairly close fit invariably ends with the belt wearing out too soon.

* * *

Chief sources of grain losses in combine harvesting are cutterbar, cylinder, rack and shoe losses. Cutterbar loss is usually the heaviest, and is caused by (1) reel set to low, (2) set to far forward or backward, (3) reel running too fast for ground speed of combine.

B. F. Goodrich V-belts are made with certain built-in features that insure fine performance. Perfect balance is achieved because only one layer of high tensile strength, pre-stretched reinforcing cords is used in their construction. A thick base absorbs overload shocks and is made of a special rubber compound that reduces internal heat by 70%. Seams of the two-ply cover are cut on a bias to prevent belt “wobble” and sealed to keep out moisture, oil and grit. Agerite, a patented B. F. Goodrich ingredient, improves V-belt aging properties 200%.

How To Get The Most Service From Flat Belts



Flat rubber belts have been driving heavy agricultural equipment since the days steam power was used and many farmers have learned to substantially increase belt life by following these three simple rules:

1. Keep pulleys clean
2. Maintain correct alignment
3. Keep tension properly adjusted

In addition, belts should be protected from oil. Oil is the greatest enemy of any rubber product. It causes swelling and gradual rotting of rubber. Mineral oils are especially penetrating, and can eventually work deep into the body of a rubber belt. When only one edge is exposed to oil, the belt elongates on that side and becomes crooked.

Apply belt dressing sparingly. Rubber belting is permanently flexible, and no dressing can penetrate into the structure of the belt without damaging it. Don't use rosin. On new belts, and on belts which become glazed through slippage, the surface can be improved with a vegetable oil, such as castor oil, tung oil, boiled linseed oil or a liquid belt dressing especially for rubber belts.

When it becomes necessary to clean belts, the safest method to remove ordinary dirt is to wash with soap or trisodium-phosphate, and rinse well. Dry-cleaning fluids may be necessary in some cases to remove greasy accumulations. Recommended mixtures are: 60% carbon tetrachloride or Pyrene fluid with 40%

high test plain gasoline (must not contain tetra ethyl), or equal parts by volume of ethyl (grain) alcohol and carbon tetrachloride.

After the season, belting should be put away carefully in a cool, dark, dry place.

* * *

To find the rpm of a driven pulley use this formula:

The diameter $\times$ rpm of the driver =
The diameter $\times$ rpm of the driven

Example:

Diameter of driver = 12", rpm = 150

Diameter of driven = 8", rpm = X

$12" \times 150 \text{ rpm} = 8" \times X \text{ rpm}$

$1800 = 8X$

Next divide 1800 by 8 = 225 rpm of driven pulley (no allowance for slippage)

B. F. Goodrich 1532 agricultural belting is used on all types of tractor and thresher drives. It's waterproof—lasts many times longer than canvas and doesn't require breaking in. It is available for endless or open end applications. For severe, high speed service on small pulleys use B. F. Goodrich Hammermill cord belts. They're built endless with multiple plies of small diameter cords, each completely surrounded by rubber, with plies separated by a thin coat of rubber. An envelope type cover of bias laid fabric increases belt life. A Hammermill cord belt is equivalent to a 4-ply fabric belt.

FACTS ABOUT OUR NATIONAL PARKS

Name	Location & Area in Acres	Features	*Facilities and Post Office
Acadia	Maine Coast 27,870	An island and mainland point combining beautiful mountains and seacoast scenery.	Hotels, stores, restaurants, cabins, studios. <i>Bar Harbor, Maine.</i>
Big Bend	S. W. Texas 691,338	Our newest national park. Thrilling country along the Rio Grande.	Stores, rooms, meals, cabins, saddle horses. <i>Marathon, Texas</i>
Bryce Canyon	Southwest Utah 35,980	Box canyon filled with beautifully colored and fantastically shaped rocks.	Hotel, lodge, transportation. <i>Springdale, Utah.</i>
Carlsbad Caverns	Southwest New Mexico 43,087	Extraordinarily large caverns, not yet fully explored, with amazing limestone formations.	Lunchroom. Bus service from El Paso and Carlsbad. <i>Carlsbad, New Mexico.</i>
Crater Lake	Southwest Oregon 160,213	An amazingly blue lake, with lava walls up to 2000 feet high, in an extinct volcano.	Hotels, camps, transportation. <i>Medford, Oregon.</i>
Glacier	Montana 997,400	200 glacier fed lakes and 60 small glaciers in precipitous alpine scenery.	Hotels, camps, boats, horses. <i>Belton, Montana.</i>
Grand Canyon	Arizona 645,084	An amazing example of erosion. The most pictured of our national parks.	Stores, hotels, restaurants, camps. <i>Grand Canyon, Arizona</i>
Grand Teton	Northwest Wyoming 94,852	The most spectacular portion of the Teton Mountains, with scenery of unusual grandeur.	Saddle horses and guides. Cabins and meal service near park. <i>Moose, Teton County, Wyoming</i>
Great Smoky Mountains	N. Carolina & Tennessee 460,881	A massive mountain uplift with beautiful scenery and the most magnificent forests.	Stores, tourist camps, hotel at Elkmont, Tenn. <i>Gatlinburg, Tennessee.</i>
Hawaii	Hawaii 173,384	Interesting areas on the islands of Hawaii and Maui, with active volcanoes.	Hotels, cottages, meals, horses. <i>Hawaii National Park, T. H.</i>
Hot Springs	Central Arkansas 1015	Springs of naturally hot water. Bath-houses operated under government supervision.	Bathhouses, refreshments, souvenirs. <i>Hot Springs National Park, Arkansas.</i>
Isle Royale	Michigan 133,838	The largest island in Lake Superior, still mainly a rugged wilderness of forest.	Lodges, cabins, meals, boats. <i>Houghton, Michigan.</i>
King's Canyon	California 453,048	Groves of giant sequoias amid Sierra mountain peaks rising to 14000 feet.	Hotel, camps, horses. <i>King's Canyon Nat. Park, California.</i>
Lassen Volcanic	California 101,880	The only recently active volcano in this country. Hot springs and mud geysers.	Cabins, store, boats, studio. <i>Mineral, California.</i>
Mammoth Cave	Kentucky 51,244	A series of spectacular caverns with many unusual mineral formations.	Hotel, cabins, transportation. <i>Mammoth Cave, Kentucky.</i>
Mesa Verde	Southwest Colorado 51,149	Contains the most notable and best preserved prehistoric cliff dwellings in this country.	Hotel, camp, transportation. <i>Mesa Verde National Park, Colorado.</i>
Mount McKinley	Alaska 1,939,199	Amazing and beautiful Alaskan scenery, North America's highest mountain.	Hotels, camps, transportation. <i>McKinley Park, Alaska.</i>
Mount Rainier	Central Washington 239,899	The largest accessible single peak glacier system. Wonderful alpine flower beds.	Baths, meals, cabins, inn. <i>Longmire, Washington.</i>
Olympic	Washington 845,759	Dense remainder of original forests, including the famous rain forests.	Cabins, meals, lodges, horses. <i>Port Angeles, Washington.</i>
Platt	Oklahoma 911	The smallest national park, containing many interesting cold mineral springs.	Overnight accommodations in nearby Sulphur, Oklahoma.
Rocky Mountain	N. Colorado 252,625	Remarkable glacier formed scenery in the Heart of the Rockies. Mountain peaks.	Camps, meals, hotels, horses. <i>Estes Park, Colorado.</i>
Sequoia	Central California 385,100	The Big Tree National Park. Scores of giant sequoias amid towering mountain ranges.	Hotels, camps, meals, transportation. <i>Sequoia National Park, California.</i>
Shenandoah	Northwest Virginia 193,472	An outstanding scenic section of the beautiful and storied Blue Ridge Mountains.	Shelter cabins, lodges, stores, meals. <i>Luray, Virginia.</i>
Wind Cave	S. Dakota 11,818	A limestone cavern with several miles of galleries, peculiar rock formations.	Overnight accommodations at Hot Springs, South Dakota.
Yellowstone	Wyoming & Montana 2,213,206	Our best known national park, famous for its geysers and herds of wild animals.	Hotels, lodges, stores near park. <i>Yellowstone Park, Wyoming</i>
Yosemite	California 756,294	A valley of world-famed beauty. Giant forests amid lofty cliffs and waterfalls.	Cabins, meals, camp grounds, hotels, <i>Yosemite National Park.</i>
Zion	S. W. Utah 94,201	A stupendous gorge with magnificent vistas, from 1500 to 2500 feet in depth	Cabins, meals, hotels, lodges. <i>Springdale, Utah.</i>

*Facilities listed are in or adjacent to each Park and may be available only in warm months. For detailed information on any Park write to National Park Service at the Post Office listed.

Mixing Fertilizers On the Farm

The farmer who uses large quantities of fertilizer may be able to save money by buying the ingredients and mixing them himself. In addition, he will learn more about fertilizers and will be able to experiment to determine which mixtures are best for his particular soils and crops. Commercial fertilizers are available, in almost any formula, but the information given here will be useful to farmers who prefer to mix their own.

A great many fertilizer materials are available but it is wise, until experience is acquired, to utilize the easily handled materials given in the list below.

Mixing the Materials

The materials are weighed, spread in layers on any tight floor and shoveled together thoroughly. They are then passed through a screen and any lumps are broken up.

To avoid caking and loss of fertilizer values, wood ashes or calcium cyanamide should not be mixed with sulphate of ammonia or other ammonium salts. Not over 150 pounds of calcium cyanamide should be used per ton of superphosphate. Quicklime or slaked lime should not be used.

Determining Formulas

The best way to start home mixing is to duplicate a formula already being used successfully. Or the nearest experimental station may be consulted for advice.

With the formula decided, the materials for making it are considered. Local costs for the various materials are obtained and the most economical and practical mixture is decided on.

It is preferable to use some materials in organic form, when possible. This is particularly necessary when using high analysis materials or when the fertilizer is to be stored. For instance, in a 4-8-4 formula the nitrogen might be one-third in the form of nitrate of soda, one-third sulphate of ammonia and one-third cottonseed meal.

Using the table below, the following materials would be used for one ton of fertilizer:

Nitrate of Soda (16%)	167	pounds
Sulphate of Ammonia	134	"
Cottonseed Meal	381	"
Superphosphate (20%)	800	"
Potassium Chloride	160	"

In actual practice, round numbers could be used. A variation of a few pounds in a ton of fertilizer will not affect its agricultural value.

The materials above total slightly more than three-quarters of a ton. This fertilizer can be applied as it is, by using only three-quarters of the normal amount. This is practical for most home-mixed fertilizers and saves labor.

However, if the fertilizer is to be stored for any considerable period, the addition of the filler may be desirable. Dried peat, ground phosphate rock, ground limestone or dolomite, or even sand may be used.

As a rule, farmers mixing their own fertilizer should avoid formulas having a high number of units, such as 10-16-14, etc. Such mixtures have been used successfully, but involve increased difficulties in spreading evenly and in storing.

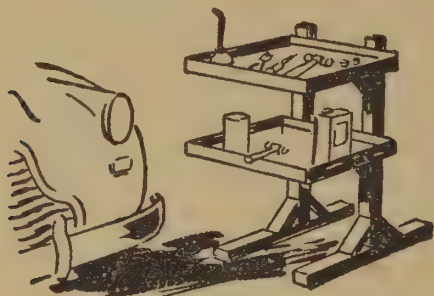
QUANTITIES OF MATERIALS NEED PER TON OF FERTILIZER

INGREDIENT	2%	4%	6%	8%	10%
Carriers of nitrogen (N):	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Nitrate of soda (15 percent N).....	266	532	800	1,066	1,333
Sulphate of ammonia (20 percent N) ..	200	400	600	800	1,000
Cottonseed meal (7 percent N).....	571	1,142	1,714	....	....
Urea (42 percent N).....	96	191	286	381	477
Carriers of phosphoric acid (P ₂ O ₅):					
Superphosphate (16 percent P ₂ O ₅)....	250	500	750	1,000	1,250
Superphosphate (20 percent P ₂ O ₅)....	200	400	600	800	1,000
Double superphosphate (40 percent P ₂ O ₅)	100	200	300	400	500
Ground bone (23 percent P ₂ O ₅).....	174	348	522	696	869
Carriers of potash (K ₂ O):					
Potassium sulphate (50 percent K ₂ O) ..	80	160	240	320	400
Potassium chloride (50 percent K ₂ O) ..	80	160	240	320	400
Kainit (20 percent K ₂ O).....	200	400	600	800	1,000
Manure salts (30 percent K ₂ O).....	134	267	400	533	667

IDEAS FOR THE FARM HANDYMAN

To Hold Bolts

Some screws and bolts in light tools and implements tend to work loose and rattle or fall out. Tighten them and place a drop or two of solder at their edges. This will prevent vibration from loosening them but permits their removal if necessary.



Tool and Parts Table

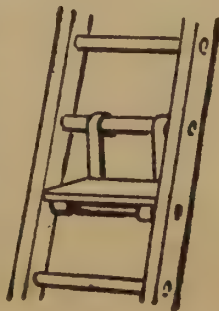
A movable work table, as shown, is a great time saver when repairing trucks, tractors and equipment. It keeps tools handy and prevents the loss of parts. It can be made quickly from scrap lumber. The two working surfaces have lips of thin board to stop parts from rolling off. Casters can be added for mobility, if desired.

Keeping Grindstones Round

Out-of-round grindstones make good grinding impossible. To true them, cut grooves in the high parts by holding an old file stationary against the stone while turning it. Chip off the grooved sections with a cold chisel so that the stone is approximately round, and smooth it off with a hard, sharp stone. Do not permit the grindstone to stand in water or allow water to drip on it. Water will soften a section of the stone so that it wears unevenly.

Ladder Platform

A small platform, as illustrated, eliminates the foot weariness caused by standing on a rung when doing big painting jobs. It is made out of strap iron and hardwood and is quickly hooked over the ladder at the desired point.



Economical Paint Remover

Three pounds of trisodium phosphate to a gallon of water makes an excellent paint remover and is much less expensive than prepared paint remover for big jobs. It is also good for removing paint from brushes. Rinse brushes thoroughly afterward.

One Man Hook-Up

One man can hook a mower or other heavy machine to a tractor with the aid of an automobile jack. Place the jack under the tongue a few inches from the tractor drawbar. The jack permits elevating the tongue to exactly the right height so that the tractor can be backed on and coupled.

Sawbuck Improvement

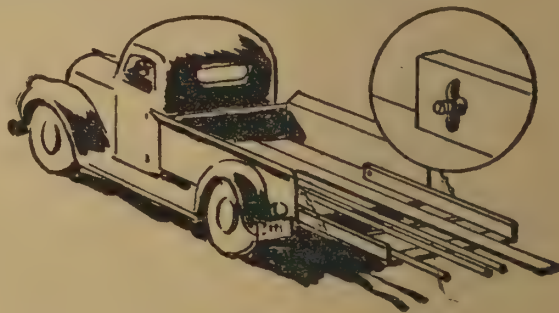
Small logs will not roll during sawing if sharpened steel teeth are screwed to



the sawbuck so that they will bite into the log. They can be cut from light steel plate, ground sharp, drilled and fastened on with wood screws.

Fork Holder

A few bags of sand placed about barns where forks are used make for neatness and extra safety. The forks can be quickly stuck into the sandbags, where they can't fall and are automatically cleaned.



Truck Lengthener

The small farm truck will carry long pieces of lumber or pipe if an extension "floor" is made as illustrated. This can readily be constructed of 2x4's. The ends are held to the truck by bolts and heavy wing nuts, which can be inserted through holes drilled in the truck body and removed quickly. The extension rests on the end gate.

Atlanta, Ga.	160	1595	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D.C.
Birmingham, Ala.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	St. Louis, Mo.
Bismarck, N. D.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Spokane, Wash.
Chicago, Ill.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Seattle, Wash.
Cincinnati, O.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	San Francisco, Calif.
Cleveland, O.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	San Antonio, Tex.
Dallas, Texas	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Salt Lake City, Utah
Denver, Colo.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Portland, Ore.
Des Moines, Iowa	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Portland, Maine
Detroit, Mich.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Phoenix, Ariz.
El Paso, Texas	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Omaha, Neb.
Houston, Texas	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Portland, Maine
Jacksonville, Fla.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Portland, Ore.
Kansas City, Mo.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Salt Lake City, Utah
Los Angeles, Calif.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	San Antonio, Tex.
Memphis, Tenn.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	San Francisco, Calif.
Miami, Fla.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Seattle, Wash.
Minneapolis, Minn.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Spokane, Wash.
New Orleans, La.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	St. Louis, Mo.
New York, N. Y.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Oklahoma City, Okla.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Omaha, Neb.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Phoenix, Ariz.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Portland, Maine	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Portland, Ore.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Salt Lake City, Utah	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
San Antonio, Tex.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
San Francisco, Calif.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Seattle, Wash.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Spokane, Wash.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
St. Louis, Mo.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.
Washington, D. C.	160	1550	750	485	735	900	1485	960	740	1535	905	325	845	2280	425	680	910	1055	1220	2860	2010	1020	2775	3005	2590	595	665	Washington, D. C.

AUTOMOBILE TOURING MILEAGE IN THE UNITED STATES

HOUSEKEEPING TIME SAVERS

Open a can of whole asparagus at the bottom so that you will not break the tender tips when removing the asparagus.

To peel oranges more easily, place them in boiling water for three or four minutes. This also makes them more juicy.

To clean copper or brass articles or utensils, wash with vinegar in which as much salt as possible has been dissolved, then wash with clear water and dry. This will remove tarnish quickly.

When baking apples, onions, stuffed peppers, etc., use muffin tins. They will keep the food in better shape.

To remove chewing gum from clothes, car upholstery, etc., hold a piece of ice on it for a few minutes. The gum will then brush off easily.

To tie packages tightly, dampen the string first. This prevents slipping and as the string dries, it shrinks and becomes tighter.



To cut fresh bread, heat the blade of the bread knife a little by passing it through flame or laying it on the stove. It will then slice smoothly.

When whipping cream, add six or eight drops of lemon juice per pint. This will make the cream whip much more quickly.

To clean hot water bottles wash inside and out in a solution of one tablespoon of baking soda to one pint of warm (not hot) water. Rinse with clear water and hang mouth down.

To remove grease from your stove top, rub with a cloth wet with vinegar. This cuts the grease rapidly.



To keep egg yolks fresh, put them in a dish of cold water and place in the refrigerator. This also prevents them from drying out.

When washing glass, add a little bluing to the soapy water and you will add shine to the glass.

To remove soot from rugs, upholstery or clothes, cover it with dry salt and then brush off with a stiff brush.

When cutting a button from a garment, slip a fork under the button and insert the scissors over the fork. This saves time and prevents cutting the garment by error.



To dry shoes, place them on their sides in a warm place where there is air circulation. Do not place them near a stove or fire.

To polish tile, after it has been washed, cover with a thin coating of laundry starch. Let this dry and then polish with a soft cloth.

To "chop" nuts rapidly for use in cakes, etc., place the whole nuts on a board under a piece of heavy paper or cloth. Then "chop" the nuts by breaking as fine as necessary, with a rolling pin.



When slicing hard boiled eggs dip the knife blade in water before each cut. This usually prevents breaking the yolks.

Candied fruit peels should be warmed well before slicing or chopping. This will make the work much easier.

When frying bacon, you can save time by crisscrossing the pieces in the pan and turning all at once.

When washing valuable dishes or glassware place a folded towel in the bottom of the dish pan or sink. This will often prevent breakage.

When shelling popcorn, use a grater to save time and roughened fingers.

To cut marshmallows use a pair of scissors dipped in warm water. This is much cleaner and quicker than using a knife.

HOME DECORATING HINTS

To insert metal curtain rods in net curtains, cover the end of the rod with a piece of adhesive tape. This is easily removed afterward and can be used again on another rod.

Painted Walls can be made more attractive by decorating them with the wallpaper borders sold in rolls. This comes in many designs and colors, and is easily applied. You can use it as border, for panels or as a pattern.



To brighten the kitchen cut colored flower pictures from magazines. Use them as wall borders, on door panels, cake boxes, etc. Stick them on with thin glue and coat them with wax, shellac or varnish so they can be cleaned easily.

Small potted plants can be tied to stakes with strips of old cellophane wrappers. These are almost invisible and will not cut or injure the plants.

To remove old wallpaper apply a solution of sal soda and water. Use a sponge or a small hand spray gun. More than one application may be necessary.

An unused fireplace will look better and save fuel if it is blocked with a close-fitting piece of insulation board or plywood. You can decorate the board with wallpaper or paint and attach handles for easy removal.



Potted plants can be kept moist for several days, while you are away, by cutting a cardboard disk the size of the pot, with a slot and hole big enough for the plant stem. This keeps the soil moist.

An unusual table cloth is quickly made by sewing inexpensive mesh dish clothes together. Bind the outside edges with matching material or fringe.

While painting a room make small swatches of the colors used on pieces of white cardboard or wood. You can use these later to assure color harmony when buying curtains, drapes, furniture, etc.

Keep pictures straight by wrapping a piece of adhesive tape around the center of the wire so that it can't slip on the nail or hook.

"Frosted" windows can be simulated by patting with a piece of putty moistened in linseed oil. Let dry and repeat if necessary. The frosting can be removed when desired with turpentine or mineral spirits.

Painted floors are popular and save rugs. They need not be plain, but may have harmonizing painted borders or can be painted in squares or patterns.

Pretty bathroom jars for bath salts, etc., can be made from small, shaped food jars having glass covers. The inside of



these can be painted in bright colors or decorative pictures can be attached with cement or clear nail polish and covered with shellac or varnish.

Make your own cedar chest by having the farm handy man make the chest of soft wood. Wipe the inside with oil of cedar once a year.

Economical doilies can be made from the pieces left over from net window curtains. Edge them with suitable fringe or lace.

To make wallpaper paste mix two parts of water with three parts of flour. Boil two minutes, stirring lumps out. When cool, dissolve two tablespoons powdered alum in each gallon.

Attractive roller shades are easily made by attaching colorful printed fabrics to the old rollers. Use the old shade as a pattern. Select sunfast fabrics, of course.

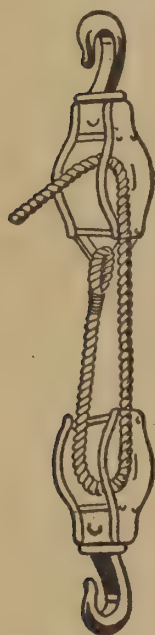


BLOCK AND TACKLE PRINCIPLES

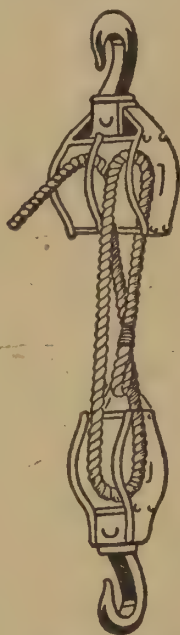
There are many uses on the farm for block and tackle equipment. Properly rigged blocks permit the lifting or pulling of heavy objects by relatively small forces.

The diagrams below show common block and tackle combinations. They have been simplified to show how the ropes are reeved. In all cases, the standing

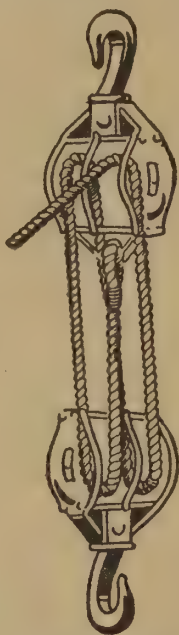
block is at the top and the running block at the bottom. The force applied to the fall line is multiplied by the number of parts of rope between the two blocks. One pound applied to the two triple blocks, for instance, will lift six pounds on the running block, less a small amount due to friction and rope condition.



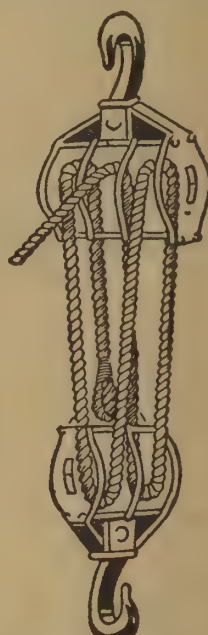
TWO SINGLE BLOCKS



DOUBLE AND SINGLE BLOCKS



TWO DOUBLE BLOCKS



DOUBLE AND TRIPLE BLOCKS

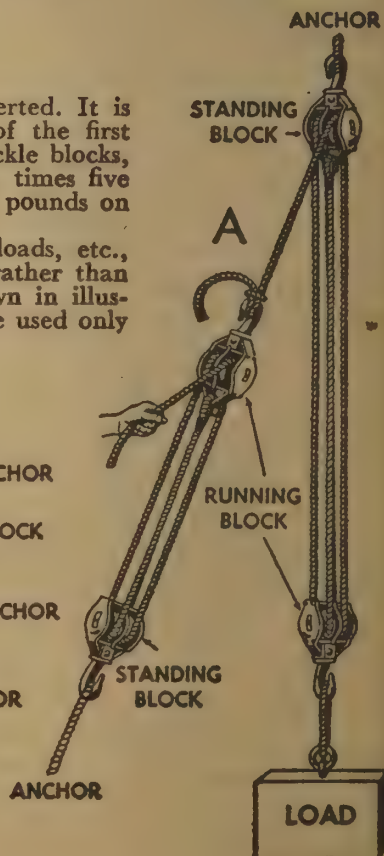
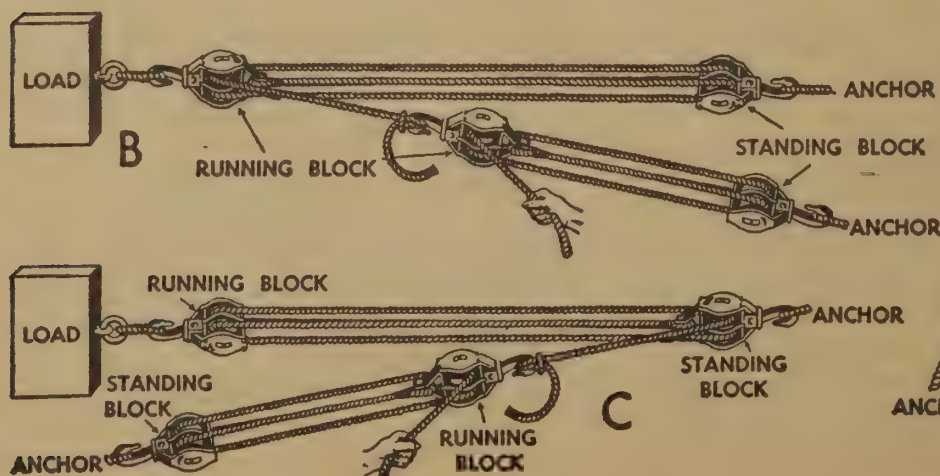


TWO TRIPLE BLOCKS

LUFFING TACKLE

Luffing tackle is an additional tackle to further multiply the force exerted. It is attached to the fall line of the tackle carrying the load. The power of the first tackle is multiplied by the number of parts of rope between the luffing tackle blocks, plus the fall line of the first tackle. In A it would be four (first tackle) times five (luffing tackle). So one pound on the luffing tackle fall line would lift 20 pounds on the running block.

For horizontal use of block and tackle such as pulling stumps, posts, loads, etc., more force will be applied if the fall line runs from the running block rather than the standing block. If the fall line runs from the running block, as shown in illustration B, the power would be 5×5 instead of 5×4 . Method C would be used only where work does not permit the more effective use.



WHAT FARMERS SAY ABOUT B. F. GOODRICH TIRES

"We operate two model M tractors—one on Goodrich Hi-Cleat and the other on a tire with closed bar design. We find we saved much time in our work when the ground is soft and the going is tough. We purposely use the tractor with the Goodrich Hi-Cleat tires when using our corn picker, for our ground is generally soft during corn-picking time, and the tires with the closed bar design will not clean as well as the Goodrich tire. We never lose a day because of soft ground with Goodrich OPEN bar tractor tires."

*Louis Drilling and Homer Morgan,
Fox River, Wisconsin*



"Like most farmers, I looked over several different kinds of tractor tires before I bought some—watched them at work on neighbors' farms. After seeing how B. F. Goodrich tires dug right in and didn't hold dirt, I decided that was the tractor tire for me. I'm sure glad I got them, because the open center tread and cleats in pairs give me that full traction I've always wanted."

Frank Haldiman, Ohio



"We bought our first set of Hi-Cleats in the Spring of 1937, and liked them so well, we bought another set—7 years later. We farm 240 acres of Platte River valley land, producing corn, sugar beets and alfalfa. In this kind of operation we have really enjoyed the extra traction and dirt shedding we get from these paired-cleat, high bar, open tread B. F. Goodrich tractor tires."

"You know we have a lot of snow out here in the winter time and we have some

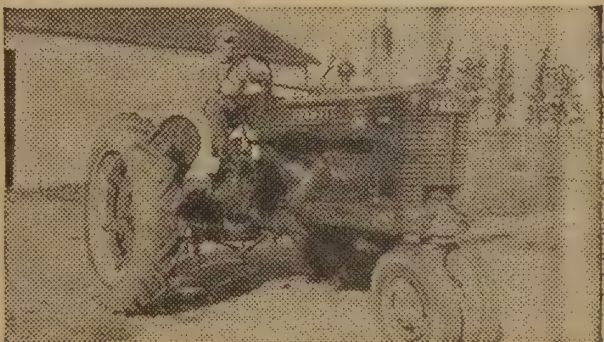
very rainy Springs, too. We just can't get along with tractor tires that spin from clogging full of snow, mud or dirt.

F. O. Johnson, North Platte, Neb.



"I figured that bad weather this season would slow up my field work and make me lose valuable time. But I found the traction I get with my B. F. Goodrich tires pulled me through ahead of schedule. I have another tractor on a similar Hi-Bar Open Center tread, but find with only single cleats I am not able to pull when the going gets tough, as I can with the Hi-Cleat Goodrich tires. With a good tractor and B. F. Goodrich tires, any farmer can count on getting the same savings and good results that I did."

Willard F. Emight, Burlington, Wisc.



"With B. F. Goodrich tires, I get into the fields earlier than many of my neighbors. I don't have trouble with slippage and I can plow faster than I ever thought possible a few years ago. I think it's the way B. F. Goodrich designs their tractor tire treads. That open center tread gives you all the traction you want. The paired cleats really do give you an extra grip just like they say." *Albert Kratzer, Ohio*

LIGHTNING FACTS AND FALLACIES

There are many superstitions, mistaken beliefs and unfounded fears about lightning. Many of these are old and difficult to change, yet they cause much unnecessary worry.

The chances of being injured or killed by lightning are very small. A few persons may be struck in this country every year, but only a fraction of the number who are injured or killed by falling down stairs. So there is less reason to be afraid of lightning than there is of the stairways in your house or barns.



Using the telephone, radio or electric appliances during a thunderstorm does not increase the probability of outside wires or antennas being struck by lightning. Electric power wires, telephone lines and antenna leads are grounded and protected against lightning if properly installed. There is little, if any, danger of shock from electric appliances or an electric circuit struck by lightning.

Scientists say that lightning is no more likely to enter a house when the windows and doors are open than when they are closed. The center of a room may be a little safer than near the outside walls, since lightning striking an unrodded house would probably pass through the walls. In rodded houses it is wise, of course, to stay away from the vicinity of conductors.

Fields used for grazing should have wooden fences or grounded metal fences. The latter should be broken at intervals with short wooden sections to prevent lightning from charging long stretches. Tall isolated trees should be removed, particularly if there is no other cover for animals.

The idea that lightning rods "draw" lightning is true only to a slight extent. Lightning striking close enough to a building to be "drawn" by lightning conductors would, in the majority of cases, damage the building if it were unrodded.

The old adage that lightning never strikes twice in the same place is incorrect. The Empire State Building and other tall buildings are struck by lightning many times a year. Very tall trees, isolated towers and poles are frequently struck more than once by lightning.



The safest places to be in an electric storm are inside a motor car, steel railroad car, metal clad building or building with a properly grounded metal roof. Inside such places it is practically impossible to be injured by lightning. The next best places are inside a building with a grounded steel skeleton or inside a properly rodded wooden structure.

The worst places to be in a thunderstorm are under lone trees or on the ground near or touching lightning conductors, down spouts, metal sheathed walls or metal towers.

There are many superstitions about cattle and lightning. It is not true that the warm bodies of cattle will draw lightning to a barn. Nor is it true that lightning will sour milk. Only bacillus produced by careless handling or prolonged warmth will sour milk. Cattle are better protected in a rodded barn during an electric storm than they are in a field, where they may be frightened or injured by lightning.

Tall, deep rooted trees around a house or building afford excellent protection against lightning damage but are not positive assurance against it. The desirability of rodding the building should be left to the judgment of an unbiased expert.



An ungrounded metal roof provides no protection against lightning. In fact it increases the probability of fires.

ALMANAC CALCULATIONS FOR 1946

Eclipses for 1946

There will be six eclipses in 1946, four of the Sun and two of the Moon.

I: A Partial Eclipse of the Sun, January 3rd, not visible here.

II: A Partial Eclipse of the Sun, May 30th, invisible here.

III: A Total Eclipse of the Moon, June 14th, invisible here.

IV: A Partial Eclipse of the Sun, June 29th, invisible here.

V: A Partial Eclipse of the Sun, November 23rd, visible here.

VI: A Total Eclipse of the Moon, December 8th; visible generally in the north-western part of North America, Europe, Asia, Africa, Australia and to Oceans adjacent.

Morning and Evening Stars, 1946

The Planet Venus (♀) is Morning Star to February 1st, then Evening Star to November 17th and then Morning Star balance of year.

The Planet Mars (♂) is Morning Star to January 13th and Evening Star then to end of year.

The Planet Jupiter (♃) is Morning Star to April 12th, then Evening Star to October 31st, after which is Morning Star balance of year.

The Planet Saturn (♄) is Morning Star to January 12th, then Evening Star to July 21st and Morning Star again to end of year.

Explanation of the Calendar Pages

The sun and moon *rise and set* times are given in Standard Time for the *latitudes* of New York (North) and Charleston (South). They are correct for these latitudes at each Standard Time Meridian of longitude but will vary a few minutes if you are north or south of these latitudes, or east or west of your Time Meridian. Only moon *rise and set* times which occur in the hours of darkness are given. The sun *slow or fast* column indicates the difference between mean (Standard) time and apparent solar time. "Sun Slow 4" shows that the sun will not arrive at the Time Meridian until 12:04. The Moon's Place column indicates which constellation the moon is in on the date given.

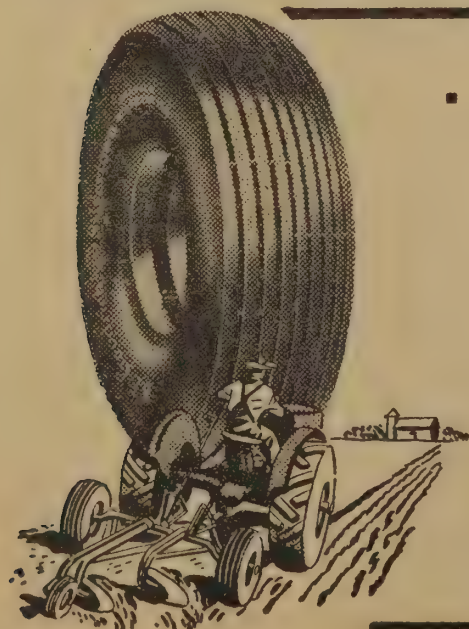
1946	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	1946	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
JAN.	...	...	1	2	3	4	5	JULY	...	1	2	3	4	5	6
	6	7	8	9	10	11	12		7	8	9	10	11	12	13
	13	14	15	16	17	18	19		14	15	16	17	18	19	20
	20	21	22	23	24	25	26		21	22	23	24	25	26	27
	27	28	29	30	31	...	...		28	29	30	31	...	...	...
FEB.	...	...	...	...	1	2	...	AUG.	...	4	5	6	7	8	9
	3	4	5	6	7	8	9		11	12	13	14	15	16	17
	10	11	12	13	14	15	16		18	19	20	21	22	23	24
	17	18	19	20	21	22	23		25	26	27	28	29	30	31
	24	25	26	27	28	...	...		...	...	...	...	...	...	...
MAR.	...	...	...	...	1	2	...	SEP.	...	1	2	3	4	5	6
	3	4	5	6	7	8	9		8	9	10	11	12	13	14
	10	11	12	13	14	15	16		15	16	17	18	19	20	21
	17	18	19	20	21	22	23		22	23	24	25	26	27	28
	24	25	26	27	28	29	30		29	30	...	...	...	...	...
	31	...	...	...	...	...	...		...	...	1	2	3	4	5
APR.	...	...	...	...	1	2	3	OCT.	...	6	7	8	9	10	11
	7	8	9	10	11	12	13		13	14	15	16	17	18	19
	14	15	16	17	18	19	20		20	21	22	23	24	25	26
	21	22	23	24	25	26	27		27	28	29	30	31	...	...
	28	29	30	...	...	...	...		...	...	...	...	...	...	...
MAY	...	...	...	...	1	2	3	NOV.	...	3	4	5	6	7	8
	5	6	7	8	9	10	11		10	11	12	13	14	15	16
	12	13	14	15	16	17	18		17	18	19	20	21	22	23
	19	20	21	22	23	24	25		24	25	26	27	28	29	30
	26	27	28	29	30	31	...		...	...	...	...	...	...	...
JUNE	...	...	...	...	...	1	...	DEC.	...	1	2	3	4	5	6
	2	3	4	5	6	7	8		8	9	10	11	12	13	14
	9	10	11	12	13	14	15		15	16	17	18	19	20	21
	16	17	18	19	20	21	22		22	23	24	25	26	27	28
	23	24	25	26	27	28	29		29	30	31	...	...	...	...
	30	...	...	...	...	...	...		...	...	...	...	...	...	...

1947	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	1947	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
JAN.	...	...	...	...	1	2	3	JULY	...	1	2	3	4	5	6
	5	6	7	8	9	10	11		6	7	8	9	10	11	12
	12	13	14	15	16	17	18		13	14	15	16	17	18	19
	19	20	21	22	23	24	25		20	21	22	23	24	25	26
	26	27	28	29	30	31	...		27	28	29	30	31	...	...
FEB.	...	...	...	...	...	1	...	AUG.	...	3	4	5	6	7	8
	2	3	4	5	6	7	8		10	11	12	13	14	15	16
	9	10	11	12	13	14	15		17	18	19	20	21	22	23
	16	17	18	19	20	21	22		24	25	26	27	28	29	30
	23	24	25	26	27	28	...		31	...	...	...	...	...	...
MAR.	...	...	...	...	...	1	...	SEP.	...	1	2	3	4	5	6
	2	3	4	5	6	7	8		7	8	9	10	11	12	13
	9	10	11	12	13	14	15		14	15	16	17	18	19	20
	16	17	18	19	20	21	22		21	22	23	24	25	26	27
	23	24	25	26	27	28	29		28	29	30	...	...	...	...
	30	31	...	...	...	...	...		...	...	...	...	...	...	...
APR.	...	...	...	...	1	2	3	OCT.	...	5	6	7	8	9	10
	6	7	8	9	10	11	12		12	13	14	15	16	17	18
	13	14	15	16	17	18	19		19	20	21	22	23	24	25
	20	21	22	23	24	25	26		26	27	28	29	30	31	...
	27	28	29	30	...	...	...		...	...	...	...	...	...	...
MAY	...	...	...	...	...	1	2	NOV.	...	2	3	4	5	6	7
	4	5	6	7	8	9	10		9	10	11	12	13	14	15
	11	12	13	14	15	16	17		16	17	18	19	20	21	22
	18	19	20	21	22	23	24		23	24	25	26	27	28	29
	25	26	27	28	29	30	31		30	...	...	...	...	...	...
JUNE	...	...	...	...	...	...	...	DEC.	...	1	2	3	4	5	6
	1	2	3	4	5	6	7		7	8	9	10	11	12	13
	8	9	10	11	12	13	14		14	15	16	17	18	19	20
	15	16	17	18	19	20	21		21	22	23	24	25	26	27
	22	23	24	25	26	27	28		28	29	30	31	...	...	...
	29	30	...	...	...	...	...		...	...	...	...	...	...	...

ALMANAC FOR JANUARY, 1946

1st Month
31 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.			MOON'S PLACE	LATITUDE of Northern States			SUN SLOW	LATITUDE of Southern States			
		☾ New Moon, 3d, 7:30 A.M. ☾ First Quarter, 10th, 3:27 P.M. ☾ Full Moon, 17th, 9:46 A.M. ☾ Last Quarter, 24th, 11:59 P.M.				SUN rises	SUN sets	MOON rises		SUN rises	SUN sets	MOON rises	
		H. M.	H. M.	H. M.		H. M.	H. M.	H. M.					
HISTORICAL EVENTS													
1	Tu	Emancipation proclaimed, 1863			♌	7 30	4 37	5 47	4	7 03	5 05	5 21	
2	We	Manila fell to Japs, 1942			♌	7 30	4 38	6 47	4	7 03	5 06	6 18	
3	Th	Earthquake at Orizaba, Mexico, 1920			♌	7 30	4 38	sets	4	7 03	5 06	sets	
4	Fr	Battle of Huntersville, Va., 1862			♌	7 30	4 39	5 47	5	7 03	5 07	6 16	
5	Sa	Richmond burned, 1786			♌	7 30	4 40	6 50	5	7 03	5 08	7 16	
Epiphany Day's Length: Northern 9.11; Southern 10.05													
6	Su	Joan of Arc born, 1402			♌	7 30	4 41	7 58	6	7 04	5 09	8 18	
7	Mo	1st telephone across Atlantic, 1927			♌	7 30	4 42	9 06	6	7 04	5 10	9 21	
8	Tu	Eli Whitney died, 1825			♌	7 30	4 43	10 16	7	7 04	5 11	10 24	
9	We	Americans landed on Luzon, 1945			♌	7 30	4 44	11 25	7	7 04	5 11	11 27	
10	Th	League of Nations in effect, 1920			♌	7 29	4 45	morn	7	7 04	5 12	morn	
11	Fr	Battle of Arkansas Post, 1863			♌	7 29	4 46	0 37	8	7 04	5 13	0 31	
12	Sa	Rhode Island Gov't dissolved, 1687			♌	7 29	4 47	1 49	8	7 03	5 14	1 38	
1st Sunday after Epiphany Day's Length: Northern 9.21; Southern 10.12													
13	Su	Earthquake in Central Italy, 1915			♌	7 28	4 49	3 04	9	7 03	5 15	2 46	
14	Mo	Benedict Arnold born, 1741			♌	7 28	4 50	4 19	9	7 03	5 16	3 55	
15	Tu	Battle of Fort Fisher, 1865			♌	7 28	4 52	5 33	9	7 03	5 17	5 04	
16	We	Civil Service Act introduced, 1883			♌	7 27	4 53	6 40	10	7 02	5 18	6 10	
17	Th	Russians entered Warsaw, 1945			♌	7 27	4 54	rises	10	7 02	5 19	rises	
18	Fr	Siege of Stalingrad broken, 1943			♌	7 26	4 55	6 08	10	7 02	5 19	6 34	
19	Sa	Georgia seceded, 1861			♌	7 26	4 56	7 18	11	7 02	5 20	7 37	
2d Sunday after Epiphany Day's Length: Northern 9.32; Southern 10.20													
20	Su	Panama Canal begun, 1882			♌	7 25	4 57	8 26	11	7 01	5 21	8 40	
21	Mo	King Louis of France beheaded, 1793			♌	7 25	4 58	9 31	11	7 01	5 22	9 39	
22	Tu	Costa Rica left League, 1925			♌	7 24	4 59	10 34	12	7 01	5 23	10 35	
23	We	Battle of Stony Creek, 1813			♌	7 23	5 00	11 33	12	7 00	5 24	11 31	
24	Th	Typewriter ribbon patented, 1888			♌	7 22	5 02	morn	12	7 00	5 25	morn	
25	Fr	Robert Burns, poet, born, 1759			♌	7 21	5 03	0 34	12	6 59	5 26	0 25	
26	Sa	Casablanca conference began, 1943			♌	7 20	5 04	1 35	13	6 59	5 27	1 20	
3d Sunday after Epiphany Day's Length: Northern 9.47; Southern 10.30													
27	Su	Wyoming ratified Suffrage, 1920			♌	7 19	5 06	2 35	13	6 58	5 28	2 15	
28	Mo	Civil War in Finland, 1918			♌	7 18	5 08	3 35	13	6 57	5 29	3 10	
29	Tu	Zeppelins bombed Paris, 1916			♌	7 17	5 09	4 34	13	6 57	5 30	4 06	
30	We	Franklin D. Roosevelt born, 1882			♌	7 17	5 11	5 32	13	6 56	5 31	5 02	
31	Th	U. S. forces invaded Kwajalein, 1944			♌	7 16	5 12	6 26	13	6 56	5 32	5 55	



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...with B. F. Goodrich
IMPLEMENT TIRES

ALMANAC FOR FEBRUARY, 1946

2nd Month
28 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.			MOON'S PLACE	LATITUDE of Northern States			SUN SLOW	LATITUDE of Southern States		
		● New Moon, 1st, 11:43 P.M. ☾ First Quarter, 8th, 11:28 P.M. ☽ Full Moon, 15th, 11:27 P.M. ☾ Last Quarter, 23d 9:36 P.M.										
						SUN	SUN	MOON		SUN	SUN	MOON
						rises	sets	sets		rises	sets	sets
HISTORICAL EVENTS					H. M.	H. M.	H. M.	H. M.	H. M.	H. M.		
1	Fr	13th Amendment proposed, 1865			♊	7 15	5 13	sets	14	6 55	5 33	sets
2	Sa	Earthquake in Japan, 1703			♊	7 14	5 14	5 44	14	6 55	5 34	6 08
4th Sunday after Epiphany					Day's Length: Northern 10.02; Southern 10.41							
3	Su	Spanish Inquisition abolished, 1813			♋	7 13	5 15	6 53	14	6 54	5 35	7 11
4	Mo	1st Confederate Congress, 1861			♋	7 12	5 16	8 06	14	6 53	5 35	8 16
5	Tu	Great German attack on Russians, 1915			♋	7 11	5 18	9 17	14	6 52	5 36	9 21
6	We	Wm. Maxwell Evarts born, 1818			♋	7 10	5 19	10 29	14	6 52	5 37	10 26
7	Th	German-Finland Peace signed, 1918			♋	7 09	5 20	11 41	14	6 51	5 38	11 32
8	Fr	King Edward VII visited Berlin, 1909			♋	7 08	5 22	morn	14	6 50	5 39	morn
9	Sa	Tornadoes along the Mississippi, 1884			♋	7 07	5 23	0 54	14	6 49	5 40	0 38
5th Sunday after Epiphany					Day's Length: Northern 10.18; Southern 10.53							
10	Su	Guadalcanal conquered by U. S., 1943			♌	7 06	5 24	2 07	14	6 48	5 41	1 45
11	Mo	Jap Treaty signed, 1922			♌	7 04	5 25	3 20	14	6 47	5 42	2 52
12	Tu	Abraham Lincoln born, 1809			♌	7 02	5 26	4 27	14	6 46	5 43	3 58
13	We	Budapest fell to Russians, 1945			♌	7 01	5 27	5 28	14	6 46	5 43	4 58
14	Th	Oregon became a state, 1859			♌	7 00	5 28	6 21	14	6 45	5 44	5 52
15	Fr	William Ellery died, 1820			♌	6 58	5 29	rises	14	6 44	5 45	rises
16	Sa	Naval Battle of San Jose, 1847			♌	6 57	5 31	6 07	14	6 43	5 46	6 21
Septuagesima Sunday					Day's Length: Northern 10.37; Southern 11.05							
17	Su	First ship through Suez Canal, 1867			♍	6 56	5 33	7 14	14	6 42	5 47	7 24
18	Mo	Japs proclaimed Manchukuo independent, 1932			♍	6 54	5 34	8 17	14	6 41	5 48	8 22
19	Tu	U. S. forces invaded Iwo Jima, 1945			♍	6 53	5 35	9 20	14	6 40	5 49	9 19
20	We	Isaac Chauncey born, 1772			♍	6 51	5 37	10 21	14	6 39	5 50	10 15
21	Th	Dirigible Roma exploded, 1922			♍	6 49	5 38	11 22	14	6 38	5 51	11 09
22	Fr	U. S. Fleet ended world cruise, 1909			♍	6 48	5 40	morn	14	6 36	5 51	morn
23	Sa	John Quincy Adams died, 1848			♍	6 47	5 41	0 22	13	6 35	5 52	0 04
Sexagesima Sunday					Day's Length: Northern 10.57; Southern 11.19							
24	Su	Arizona made a territory, 1863			♎	6 45	5 42	1 22	13	6 34	5 53	1 00
25	Mo	1st revolver patented, 1836			♎	6 44	5 44	2 23	13	6 33	5 53	1 56
26	Tu	Battle of Falmouth, 1863			♎	6 42	5 45	3 22	13	6 32	5 54	2 51
27	We	Francis Marion died, 1795			♎	6 40	5 46	4 16	13	6 31	5 55	3 45
28	Th	1st railroad chartered, 1827			♎	6 38	5 47	5 05	13	6 29	5 56	4 36

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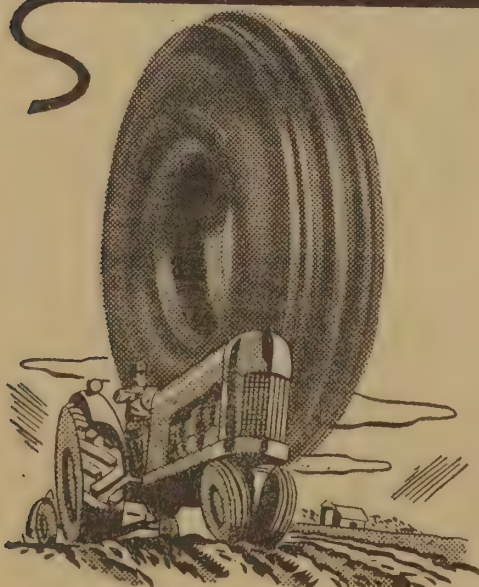
TIRE MADE OF
NATURAL RUBBER

THE NEW
SILVERTOWN

ALMANAC FOR MARCH, 1946

3rd Month
31 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.			MOON'S PLACE	LATITUDE of Northern States			SUN SLOW	LATITUDE of Southern States		
		● New Moon, 3d, 1:01 P.M. ● First Quarter, 10th, 7:03 A.M. ● Full Moon, 17th, 2:11 P.M. ● Last Quarter, 25th, 5:37 P.M.				SUN rises	SUN sets	MOON rises		SUN rises	SUN sets	MOON rises
		HISTORICAL EVENTS										
1	Fr	1st U. S. bank chartered, 1780			♈	6 37	5 49	5 50	12	6 28	5 57	5 23
2	Sa	Territory of Dakota formed, 1861			♈	6 36	5 50	6 28	12	6 27	5 58	6 05
Quinquagesima Sunday												
Day's Length: Northern 11.17; Southern 11.33												
3	Su	1st U. S. planes flew over Berlin, 1944			♈	6 34	5 51	sets	12	6 26	5 59	sets
4	Mo	Lincoln inaugurated, 1861			♈	6 33	5 53	7 01	12	6 25	6 00	7 07
5	Tu	Spain took Louisiana, 1766			♈	6 31	5 54	8 14	12	6 24	6 00	8 13
6	We	Joseph Bellamy died, 1790			♈	6 29	5 55	9 28	11	6 23	6 01	9 21
7	Th	Germans marched into the Rhine, 1936			♈	6 27	5 56	10 43	11	6 22	6 02	10 29
8	Fr	First Army crossed Rhine at Remagen, 1945			♈	6 25	5 57	11 58	11	6 20	6 02	11 37
9	Sa	Edwin Forrest born, 180			♈	6 24	5 59	morn	11	6 19	6 03	morn
Quadragesima Sunday												
Day's Length: Northern 11.38; Southern 11.46												
10	Su	Battle of Wilcox's Bridge, 1865			♈	6 22	6 00	1 12	10	6 18	6 04	0 46
11	Mo	German troops entered Austria, 1938			♈	6 21	6 01	2 22	10	6 17	6 04	1 52
12	Tu	Simon Newcomb born, 1835			♈	6 19	6 02	3 24	10	6 16	6 05	2 53
13	We	China broke with Germany, 1917			♈	6 17	6 03	4 19	10	6 14	6 06	3 48
14	Th	American forces arrived in Australia, 1942			♈	6 15	6 04	5 02	9	6 13	6 07	4 36
15	Fr	Columbus ended 1st voyage, 1493			♈	6 13	6 05	5 39	9	6 11	6 08	5 18
16	Sa	James Madison, president, born, 1751			♈	6 12	6 07	6 10	9	6 10	6 08	5 55
3d Sunday in Lent												
Day's Length: Northern 11.58; Southern 12.00												
17	Su	First glider flight made, 1884			♈	6 10	6 08	rises	8	6 09	6 09	rises
18	Mo	Grover Cleveland, president, born, 1837			♈	6 09	6 09	7 07	8	6 08	6 10	7 08
19	Tu	LaSalle assassinated, 1687			♈	6 07	6 10	8 08	8	6 06	6 10	8 04
20	We	King Henry IV of England died, 1413			♈	6 05	6 11	9 10	8	6 05	6 11	9 00
21	Th	Great German offensive began, 1918			♈	6 04	6 12	10 12	7	6 04	6 12	9 55
22	Fr	Czar of Russia jailed 1917			♈	6 02	6 13	11 13	7	6 02	6 12	10 50
23	Sa	Hitler made German dictator, 1933			♈	6 00	6 14	morn	7	6 01	6 13	11 47
3d Sunday in Lent												
Day's Length: Northern 12.16; Southern 12.14												
24	Su	Henry W. Longfellow died, 1882			♈	5 59	6 15	0 13	6	6 00	6 14	morn
25	Mo	Germans took Bapaume, 1918			♈	5 57	6 16	1 11	6	5 58	6 15	0 41
26	Tu	Embargo Act passed, 1794			♈	5 55	6 18	2 07	6	5 57	6 16	1 35
27	We	Charles of Austria returned, 1921			♈	5 53	6 19	2 57	5	5 55	6 17	2 26
28	Th	Treaty with Denmark, 1830			♈	5 51	6 20	3 43	5	5 53	6 17	3 14
29	Fr	Japan adopted gold standard, 1897			♈	5 49	6 21	4 23	5	5 52	6 18	3 58
30	Sa	Russia ceded Alaska to U. S., 1867			♈	5 47	6 22	4 57	4	5 51	6 18	4 38
4th Sunday in Lent												
Day's Length: Northern 12.37; Southern 12.29												
31	Su	Knut Rockne killed, 1931			♈	5 46	6 23	5 28	4	5 50	6 19	5 16



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ALMANAC FOR APRIL, 1946

4th Month
30 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.			MOON'S PLACE	LATITUDE of Northern States			SUN SLOW	LATITUDE of Southern States		
		● New Moon, 1st, 11:37 P.M. ● First Quarter, 8th, 3:04 P.M. ● Full Moon, 16th, 5:47 A.M. ● Last Quarter, 24th, 10:18 A.M.				SUN rises	SUN sets	MOON sets		SUN rises	SUN sets	MOON sets
		H. M.	H. M.	H. M.		H. M.	H. M.	H. M.				
HISTORICAL EVENTS												
1	Mo	Americans landed on Okinawa, 1945	☾	5 44	6 24	sets	4	5 49	6 20	sets		
2	Tu	Battle of Petersburg, 1865	☾	5 43	6 26	7 06	4	5 48	6 21	7 02		
3	We	Jesse James killed, 1882	☾	5 41	6 27	8 23	3	5 46	6 21	8 11		
4	Th	President Harrison died, 1841	☾	5 39	6 28	9 41	3	5 45	6 22	9 24		
5	Fr	Joseph Lister, great physician, born, 1827.	☾	5 37	6 29	10 59	3	5 44	6 23	10 34		
6	Sa	U. S. declared war on Germany, 1917	☾	5 36	6 30	morn	2	5 43	6 23	11 44		
5th Sunday in Lent						Day's Length: Northern 12.57; Southern 12.42						
7	Su	Battle of Red River, 1864	☾	5 34	6 31	0 13	2	5 42	6 24	morn		
8	Mo	King Albert I of Belgium born, 1875	☾	5 32	6 32	1 20	2	5 40	6 24	0 48		
9	Tu	Germans invaded Denmark and Norway, 1940	☾	5 31	6 33	2 17	2	5 39	6 25	1 46		
10	We	Strong German offensive begun, 1916	☾	5 29	6 34	3 04	1	5 38	6 26	2 36		
11	Th	Richard Harding Davis died, 1916	☾	5 27	6 35	3 42	1	5 36	6 26	3 20		
12	Fr	President Roosevelt died, 1945	☾	5 26	6 37	4 14	1	5 35	6 27	3 57		
13	Sa	Vienna fell to Russians, 1945	☾	5 24	6 38	4 41	1	5 34	6 28	4 30		
Palm Sunday						Day's Length: Northern 13.16; Southern 12.55						
14	Su	American Fleet returned, 1919	☾	5 23	6 39	5 06	0	5 33	6 28	5 00		
15	Mo	Prince of Wales in Japan, 1922	☾	5 22	6 41	5 29	F	5 32	6 29	5 28		
16	Tu	Battle of Columbus, Ala., 1865	☾	5 20	6 42	rises	0	5 31	6 30	rises		
17	We	Benjamin Franklin died, 1790	☾	5 18	6 43	8 01	0	5 30	6 31	7 47		
18	Th	Tokyo bombed by Doolittle fliers, 1942	☾	5 16	6 44	9 02	1	5 28	6 31	8 43		
19	Fr	Tornadoes in Illinois, 1927	☾	5 14	6 45	10 04	1	5 27	6 32	9 39		
20	Sa	Daniel Chester French born, 1850	☾	5 12	6 46	11 03	1	5 26	6 33	10 34		
Easter Sunday						Day's Length: Northern 13.36; Southern 13.08						
21	Su	Russians entered Berlin, 1945	☾	5 11	6 47	11 59	1	5 25	6 33	11 29		
22	Mo	Blockage of Cuba declared, 1898	☾	5 10	6 48	morn	2	5 24	6 34	morn		
23	Tu	Turkey severed U. S. relations, 1917	☾	5 08	6 50	0 52	2	5 23	6 35	0 21		
24	We	Women voted in Belgium, 1921	☾	5 06	6 51	1 38	2	5 22	6 36	1 08		
25	Th	Allied and Russian armies contact at Torgau, 1945	☾	5 05	6 52	2 19	2	5 21	6 36	1 54		
26	Fr	John Wilkes Booth killed, 1865	☾	5 04	6 54	2 55	2	5 20	6 37	2 33		
27	Sa	Steamboat Sultana exploded, 1865	☾	5 02	6 55	3 27	2	5 19	6 38	3 11		
Low Sunday						Day's Length: Northern 13.56; Southern 13.21						
28	Su	Italians executed Mussolini, 1945	☾	5 00	6 56	3 55	3	5 18	6 39	3 46		
29	Mo	Seventh Army entered Munich, 1945	☾	4 59	6 57	4 22	3	5 16	6 39	4 20		
30	Tu	First President inaugurated, 1789	☾	4 57	6 58	4 51	3	5 15	6 40	4 54		

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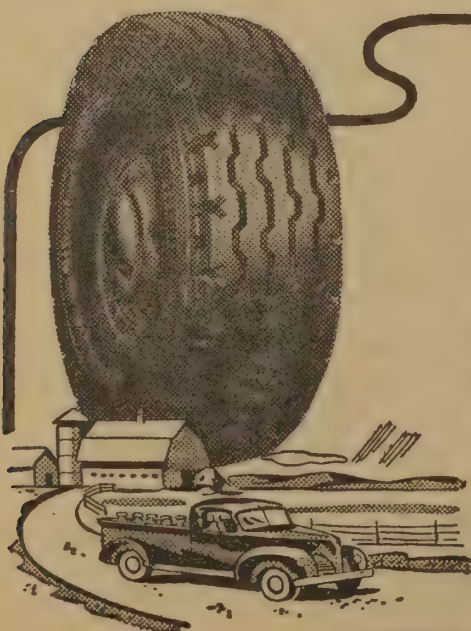
HI-CLEAT Tractor Tires



ALMANAC FOR MAY, 1946

5th Month
31 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.	MOON'S PLACE	LATITUDE of Northern States			SUN FAST	LATITUDE of Southern States		
				SUN	SUN	MOON		SUN	SUN	MOON
				rises	sets	sets		rises	sets	sets
				H. M.	H. M.	H. M.		H. M.	H. M.	H. M.
1	We	Pan-American Exposition began, 1901	♌	4 56	6 59	sets	3	5 14	6 41	sets
2	Th	German forces in Italy surrendered, 1945	♌	4 55	7 01	8 35	3	5 13	6 42	8 12
3	Fr	British liberated all Burma, 1945	♍	4 53	7 02	9 54	3	5 12	6 42	9 26
4	Sa	Western German armies surrendered, 1945	♍	4 52	7 03	11 07	3	5 11	6 43	10 35
2d Sunday after Easter				Day's Length: Northern 14.13; Southern 13.34						
5	Su	Financial panic in New York, 1884	♍	4 51	7 04	morn	3	5 10	6 44	11 38
6	Mo	Corregidor fell to Japs, 1942	♍	4 49	7 05	0 10	3	5 09	6 45	morn
7	Tu	Tunis and Bizerte captured by Allies, 1943	♎	4 48	7 06	1 02	4	5 08	6 45	0 34
8	We	President Harry S. Truman born, 1884	♎	4 47	7 07	1 44	4	5 07	6 46	1 20
9	Th	U. S. Navy victory in Coral Sea 1942	♎	4 46	7 08	2 19	4	5 06	6 47	1 59
10	Fr	Germans invaded Belgium and Holland, 1940	♏	4 45	7 09	2 47	4	5 06	6 48	2 33
11	Sa	Allies began great new offensive in Italy, 1944	♏	4 44	7 10	3 12	4	5 05	6 48	3 04
3d Sunday after Easter				Day's Length: Northern 14.28; Southern 13.45						
12	Su	Russians launched offensive against Kharkov, 1942	♏	4 43	7 11	3 34	4	5 04	6 49	3 33
13	Mo	England proclaimed neutrality, 1861	♏	4 41	7 12	3 56	4	5 03	6 50	4 00
14	Tu	Dutch surrendered to Germans, 1940	♐	4 40	7 13	4 19	4	5 03	6 50	4 28
15	We	Air Mail Service began, 1918	♐	4 39	7 14	rises	4	5 02	6 51	rises
16	Th	Battle of Marksville, 1864	♐	4 38	7 15	7 55	4	5 01	6 52	7 32
17	Fr	Italian cabinet decided on war, 1915	♑	4 37	7 16	8 57	4	5 00	6 52	8 29
18	Sa	Peace Conference at Hague, 1899	♑	4 36	7 18	9 55	4	5 00	6 53	9 24
4th Sunday after Easter				Day's Length: Northern 14.44; Southern 13.55						
19	Su	Anne Boleyn beheaded, 1536	♑	4 35	7 19	10 49	4	4 59	6 54	10 17
20	Mo	Lindbergh began Paris flight, 1927	♑	4 34	7 20	11 37	4	4 59	6 55	11 05
21	Tu	1st steamer on the Missouri, 1819	♒	4 33	7 21	morn	4	4 58	6 55	11 51
22	We	Alexander Pope, poet, born, 1688	♒	4 32	7 22	0 19	4	4 57	6 56	morn
23	Th	Earthquakes in Japan, 1925	♒	4 31	7 23	0 55	3	4 57	6 57	0 32
24	Fr	Arizona ratified Prohibition, 1918	♒	4 31	7 24	1 27	3	4 56	6 57	1 09
25	Sa	German air raid on England, 1917	♒	4 30	7 25	1 56	3	4 56	6 58	1 44
Rogation Sunday				Day's Length: Northern 14.57; Southern 14.03						
26	Su	Germans started drive to Tobruk, 1942	♓	4 29	7 26	2 23	3	4 55	6 58	2 17
27	Mo	Henry Adams, historian, died, 1918	♓	4 29	7 27	2 49	3	4 55	6 59	2 49
28	Tu	Belgium troops surrendered, 1940	♓	4 28	7 27	3 17	3	4 54	7 00	3 24
29	We	Patrick Henry, statesman, born, 1736	♓	4 27	7 28	3 47	3	4 54	7 00	4 01
30	Th	Panic on Brooklyn Bridge, 1883	♓	4 26	7 29	sets	3	4 54	7 01	sets
31	Fr	French Reign of Terror began, 1793	♓	4 26	7 29	8 43	2	4 54	7 01	8 13



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ALMANAC FOR JUNE, 1946

6th Month
30 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.	MOON'S PLACE	LATITUDE of Northern States			SUN FAST	LATITUDE of Southern States		
				SUN rises	SUN sets	MOON sets		SUN rises	SUN sets	MOON sets
				H. M.	H. M.	H. M.		H. M.	H. M.	H. M.
1	Sa	Brigham Young, pioneer, born, 1801	♌	4 25	7 30	9 54	2	4 53	7 02	9 22
Sunday after Ascension				Day's Length: Northern 15.06; Southern 14.09						
2	Su	Maine prohibition law, 1851	♌	4 25	7 31	10 54	2	4 53	7 02	10 23
3	Mo	Jap fleet turned back at Midway, 1942	♍	4 24	7 31	11 42	2	4 53	7 03	11 14
4	Tu	Rome fell to Allies, 1944	♍	4 24	7 32	morn	2	4 53	7 04	11 58
5	We	Scott's "Ivanhoe" published, 1820	♌	4 24	7 33	0 19	2	4 52	7 04	morn
6	Th	"D" Day, invasion of Normandy began, 1944	♌	4 23	7 33	0 50	1	4 52	7 05	0 35
7	Fr	A. S. Burleson, statesman, born, 1863	♍	4 23	7 34	1 17	1	4 52	7 05	1 07
8	Sa	Penny postcard authorized, 1872	♍	4 23	7 35	1 40	1	4 52	7 06	1 36
Pentecost—Whit Sunday				Day's Length: Northern 15.13; Southern 14.14						
9	Su	U. S. Slavery abolished, 1862	♍	4 22	7 35	2 03	1	4 52	7 06	2 04
10	Mo	Italy declared war on England & France, 1940	♎	4 22	7 36	2 24	1	4 52	7 07	2 31
11	Tu	Henry Whitney Bellows born, 1814	♎	4 22	7 37	2 48	0	4 51	7 07	3 00
12	We	Japs landed in Aleutian Islands, 1942	♎	4 22	7 37	3 13	0	4 51	7 08	3 31
13	Th	Department of Labor created, 1888	♎	4 22	7 38	3 42	0	4 51	7 08	4 05
14	Fr	Benedict Arnold died, 1801	♏	4 21	7 38	rises	S	4 51	7 09	rises
15	Sa	U. S. Marines invaded Saipan, 1944	♏	4 21	7 39	8 44	0	4 51	7 09	8 11
Trinity Sunday				Day's Length: Northern 15.18; Southern 14.18						
16	Su	1st B-29's bombed Japan homeland, 1944	♏	4 21	7 39	9 35	1	4 51	7 09	9 02
17	Mo	Sir Wm. Crookes, chemist, born, 1832	♐	4 21	7 40	10 18	1	4 51	7 10	9 50
18	Tu	Battle of Waterloo, 1815	♐	4 21	7 40	10 57	1	4 51	7 10	10 32
19	We	Baltic Canal opened, 1895	♐	4 21	7 40	11 31	1	4 52	7 11	11 10
20	Th	U.S. planes wreck Jap force in Philippine Sea, 1944	♑	4 22	7 41	11 59	1	4 52	7 11	11 45
21	Fr	Foreigners besieged in Peking, 1900	♑	4 22	7 41	morn	2	4 52	7 11	morn
22	Sa	German-French armistice signed, 1940	♑	4 22	7 41	0 25	2	4 52	7 11	0 17
1st Sunday after Trinity				Day's Length: Northern 15.19; Southern 14.18						
23	Su	Grant's Tomb completed, 1897	♒	4 22	7 41	0 51	2	4 53	7 11	0 49
24	Mo	Grover Cleveland died, 1908	♒	4 23	7 42	1 17	2	4 53	7 11	1 21
25	Tu	Battle of Oak Grove, 1862	♒	4 23	7 42	1 45	3	4 53	7 11	1 55
26	We	Russians resumed drive westward, 1944	♓	4 23	7 42	2 17	3	4 54	7 12	2 34
27	Th	Helen Keller, author, born, 1880	♓	4 24	7 42	2 55	3	4 54	7 12	3 18
28	Fr	British victory at Lens, 1917	♒	4 24	7 42	sets	3	4 54	7 12	sets
29	Sa	First Negro church in America, 1794	♒	4 24	7 41	8 36	3	4 55	7 12	8 04
2d Sunday after Trinity				Day's Length: Northern 15.16; Southern 14.17						
30	Su	1st railway in China opened, 1876	♈	4 25	7 41	9 31	4	4 55	7 12	9 01

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ALMANAC FOR JULY, 1946

7th Month
31 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.		MOON'S PLACE	LATITUDE of Northern States			SUN SLOW	LATITUDE of Southern States			
		First Quarter, 6th, 0:15 A.M.			SUN	SUN	MOON		SUN	SUN	MOON	
		Full Moon, 14th, 4:22 A.M.										
		Last Quarter, 21st, 2:52 P.M.										
New Moon, 28th, 6:53 A.M.												
HISTORICAL EVENTS					H. M.	H. M.	H. M.		H. M.	H. M.	H. M.	
1	Mo	Dominion of Canada established, 1867			☾	4 25	7 41	10 14	4	4 56	7 12	9 50
2	Tu	Russian victory on the Baltic, 1915			☾	4 26	7 41	10 49	4	4 56	7 12	10 31
3	We	Battle of Gettysburg ended, 1863			☾	4 26	7 41	11 18	4	4 57	7 12	11 06
4	Th	James Monroe died, 1831			☾	4 27	7 41	11 43	4	4 57	7 12	11 37
5	Fr	George Borrow, writer, born, 1803			☾	4 28	7 41	morn	4	4 57	7 12	morn
6	Sa	Serious German robot bomb attacks on Eng., 1944			☾	4 28	7 40	0 06	5	4 58	7 11	0 06
3rd Sunday after Trinity					Day's Length: Northern 15.11; Southern 14.13							
7	Su	Japanese invaded China, 1937			☾	4 29	7 40	0 29	5	4 58	7 11	0 34
8	Mo	Wilson returned from France, 1919			☾	4 29	7 40	0 52	5	4 59	7 11	1 02
9	Tu	Washington signed his will, 1799			☾	4 30	7 39	1 16	5	4 59	7 11	1 32
10	We	American forces invaded Sicily, 1943			☾	4 31	7 39	1 43	5	5 00	7 10	2 05
11	Th	John Quincy Adams born, 1767			☾	4 31	7 38	2 15	5	5 00	7 10	2 42
12	Fr	Hull crossed to Canada, 1813			☾	4 32	7 38	2 53	5	5 01	7 10	3 23
13	Sa	Battle of Falling Water, 1863			☾	4 33	7 37	3 37	6	5 01	7 09	4 10
4th Sunday after Trinity					Day's Length: Northern 15.03; Southern 14.07							
14	Su	U. S. Fleet shelled Japanese mainland, 1945			☾	4 34	7 37	rises	6	5 02	7 09	rises
15	Mo	Wm. Collins Whitney born, 1841			☾	4 34	7 36	8 58	6	5 02	7 09	8 31
16	Tu	Earthquake in Los Angeles, 1920			☾	4 35	7 36	9 33	6	5 03	7 08	9 11
17	We	Farm Loan Bank Act passed, 1916			☾	4 36	7 35	10 03	6	5 03	7 08	9 47
18	Th	John Paul Jones died, 1792			☾	4 37	7 34	10 30	6	5 04	7 08	10 20
19	Fr	Disastrous fire in New York, 1845			☾	4 38	7 34	10 55	6	5 05	7 07	10 51
20	Sa	Confederate Congress met, 1861			☾	4 39	7 33	11 21	6	5 05	7 07	11 22
5th Sunday after Trinity					Day's Length: Northern 14.52; Southern 14.00							
21	Su	Guam invaded by Americans, 1944			☾	4 40	7 32	11 47	6	5 06	7 06	11 55
22	Mo	Pilgrims left for America, 1620			☾	4 41	7 31	morn	6	5 07	7 06	morn
23	Tu	Howe sailed on Philadelphia, 1777			☾	4 42	7 30	0 16	6	5 07	7 05	0 31
24	We	Salt Lake City founded, 1847			☾	4 43	7 29	0 49	6	5 08	7 05	1 11
25	Th	Mussolini forced out as dictator, 1943			☾	4 44	7 28	1 31	6	5 09	7 04	1 58
26	Fr	Battle of Big Creek, 1864			☾	4 45	7 27	2 21	6	5 10	7 04	2 52
27	Sa	Jane McCrae killed, 1777			☾	4 46	7 26	3 23	6	5 10	7 03	3 54
6th Sunday after Trinity					Day's Length: Northern 14.38; Southern 13.51							
28	Su	French Revolution ended 1794			☾	4 47	7 25	sets	6	5 11	7 02	sets
29	Mo	1st Almanac printed, 1472			☾	4 48	7 24	8 44	6	5 12	7 01	8 23
30	Tu	Allied "break-through" in France, 1944			☾	4 49	7 24	9 16	6	5 12	7 00	9 02
31	We	Andrew Jackson died, 1875			☾	4 50	7 23	9 43	6	5 13	6 59	9 35

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ALMANAC FOR AUGUST, 1946

8th Month
31 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.	MOON'S PLACE	LATITUDE of Northern States			SUN SLOW	LATITUDE of Southern States		
				SUN rises	SUN sets	MOON sets		SUN rises	SUN sets	MOON sets
				H. M.	H. M.	H. M.		H. M.	H. M.	H. M.
1	Th	Japan at war with China, 1894	♊	4 51	7 21	10 08	6	5 13	6 59	10 05
2	Fr	Alexander Graham Bell died, 1922	♊	4 52	7 20	10 33	6	5 14	6 58	10 34
3	Sa	British fleet mobilized, 1914	♊	4 53	7 19	10 54	6	5 15	6 57	11 02
7th Sunday after Trinity										
				Day's Length: Northern 14.24; Southern 13.40						
4	Su	Battle of Brownstown, 1812	♊	4 54	7 18	11 18	6	5 16	6 56	11 32
5	Mo	German Atlantic cables cut, 1914	♊	4 55	7 17	11 44	6	5 17	6 56	morn
6	Tu	Amer. drops 1st atomic bomb on Hiroshima, 1945	♊	4 56	7 16	morn	6	5 17	6 55	0 04
7	We	Peace Bridge dedicated, 1927	♊	4 57	7 14	0 14	6	5 18	6 54	0 39
8	Th	American forces landed on Guadalcanal, 1942	♊	4 58	7 13	0 50	5	5 18	6 53	1 18
9	Fr	Second atomic bomb dropped on Nagasaki, 1945	♊	4 59	7 12	1 31	5	5 19	6 52	2 03
10	Sa	Japs offered to surrender, 1945	♊	5 00	7 11	2 21	5	5 19	6 51	2 53
8th Sunday after Trinity										
				Day's Length: Northern 14.08; Southern 13.30						
11	Su	Andrew Carnegie died, 1919	♊	5 01	7 09	3 17	5	5 20	6 50	3 49
12	Mo	King Philip killed in R. I., 1676	♊	5 02	7 07	rises	5	5 21	6 49	rises
13	Tu	Cortez took Mexico, 1521	♊	5 03	7 06	8 05	5	5 21	6 48	7 47
14	We	Pres. Truman announced Japanese surrender, 1945	♊	5 04	7 04	8 33	5	5 22	6 47	8 22
15	Th	Allied forces landed in Southern France, 1944	♊	5 05	7 03	8 59	4	5 23	6 46	8 54
16	Fr	Henry Winter Davis born, 1817	♊	5 06	7 01	9 24	4	5 23	6 45	9 24
17	Sa	1st Food Inspection Act, 1890	♊	5 08	7 00	9 50	4	5 24	6 44	9 57
9th Sunday after Trinity										
				Day's Length: Northern 13.50; Southern 13.18						
18	Su	Santa Fe occupied, 1846	♊	5 09	6 59	10 18	4	5 25	6 43	10 32
19	Mo	U. S. tank units reached Paris, 1944	♊	5 10	6 57	10 50	3	5 26	6 42	11 10
20	Tu	Steamer Superior sank, 1920	♊	5 11	6 56	11 27	3	5 26	6 41	11 53
21	We	Tennessee ratified Suffrage, 1920	♊	5 12	6 55	morn	3	5 27	6 40	morn
22	Th	Amos Adams Lawrence died, 1886	♊	5 13	6 53	0 12	3	5 28	6 39	0 43
23	Fr	1st steamboat on Lake Erie, 1818	♊	5 14	6 52	1 08	3	5 28	6 37	1 41
24	Sa	Hawaiian-U. S. Treaty, 1850	♊	5 15	6 50	2 13	2	5 29	6 36	2 45
10th Sunday after Trinity										
				Day's Length: Northern 13.32; Southern 13.05						
25	Su	New Orleans founded, 1718	♊	5 17	6 49	3 24	2	5 29	6 34	3 52
26	Mo	Paul Rader, clergyman, born, 1879	♊	5 18	6 47	sets	2	5 30	6 33	sets
27	Tu	Battle of Long Island, 1776	♊	5 19	6 45	7 43	1	5 31	6 32	7 32
28	We	Nineteenth amendment ratified, 1920	♊	5 20	6 43	8 08	1	5 31	6 31	8 03
29	Th	Hurricane in Virgin Islands, 1924	♊	5 21	6 41	8 32	1	5 32	6 30	8 32
30	Fr	Peru adopted new constitution, 1925	♊	5 22	6 39	8 55	1	5 32	6 29	9 01
31	Sa	G. W. Curtis died, 1892	♊	5 23	6 38	9 19	0	5 33	6 28	9 31

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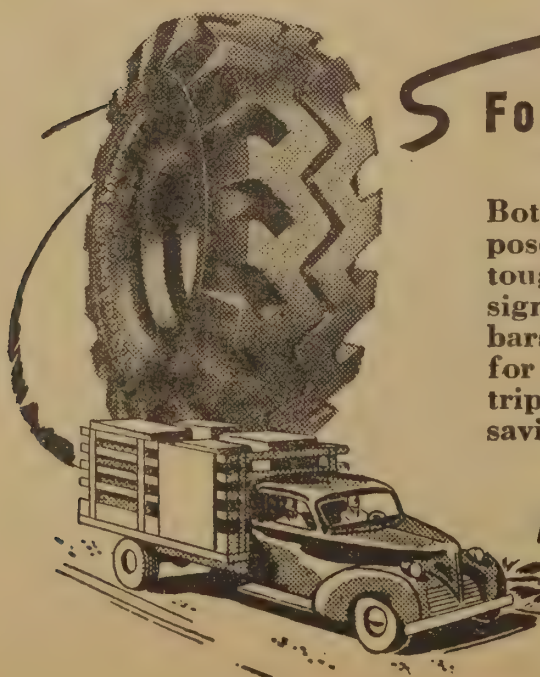
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ALMANAC FOR SEPTEMBER, 1946

9th Month
30 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.	MOON'S PLACE	LATITUDE of Northern States			SUN FAST	LATITUDE of Southern States				
				SUN rises	SUN sets	MOON sets		SUN rises	SUN sets	MOON sets		
											H. M.	H. M.
		HISTORICAL EVENTS										
11th Sunday after Trinity		Day's Length: Northern 13.12; Southern 12.52										
1	Su	Germans attacked Poland, 1939	♏	5 24	6 36	9 44	0	5 34	6 26	10 02		
2	Mo	Japanese sign surrender on U. S. S. Missouri, 1945	♏	5 25	6 35	10 13	0	5 35	6 24	10 36		
3	Tu	Great Britain declared war on Germany, 1939	♏	5 26	6 33	10 46	1	5 35	6 23	11 13		
4	We	Los Angeles founded, 1781	♏	5 27	6 32	11 25	1	5 36	6 22	11 56		
5	Th	George Stoneman died, 1894	♏	5 28	6 30	morn	1	5 37	6 21	morn		
6	Fr	Naval revolt in Brazil, 1893	♏	5 29	6 28	0 12	2	5 37	6 19	0 43		
7	Sa	American paratroopers landed at Lae, 1943	♏	5 30	6 26	1 05	2	5 38	6 18	1 37		
12th Sunday after Trinity		Day's Length: Northern 12.53; Southern 12.39										
8	Su	Italy surrendered, 1943	♏	5 31	6 24	2 05	2	5 38	6 17	2 34		
9	Mo	Russian victory in Galacia, 1914	♏	5 32	6 22	3 10	3	5 39	6 16	3 35		
10	Tu	General Wheeler, soldier, born, 1836	♏	5 33	6 20	4 18	3	5 40	6 14	4 37		
11	We	First Army entered German territory, 1944	♏	5 35	6 19	rises	3	5 40	6 13	rises		
12	Th	Fourth draft called, 1918	♏	5 36	6 17	7 27	4	5 41	6 11	7 25		
13	Fr	Alaska gold strike, 1914	♏	5 37	6 15	7 53	4	5 42	6 10	7 58		
14	Sa	President McKinley died, 1901	♏	5 38	6 14	8 20	5	5 42	6 09	8 32		
13th Sunday after Trinity		Day's Length: Northern 12.33; Southern 12.24										
15	Su	Typhoon in Japan, 1923	♏	5 39	6 12	8 51	5	5 43	6 07	9 09		
16	Mo	Wall Street bomb explosion, 1920	♏	5 40	6 10	9 27	5	5 43	6 06	9 51		
17	Tu	Peter J. Lesley born, 1819	♏	5 41	6 08	10 10	6	5 44	6 05	10 39		
18	We	Japanese began occupation of Manchuria, 1931	♏	5 42	6 06	11 02	6	5 45	6 03	11 34		
19	Th	Siege of Paris began, 1870	♏	5 43	6 04	morn	6	5 45	6 02	morn		
20	Fr	Wired glass patented, 1892	♏	5 44	6 02	0 02	7	5 46	6 01	0 35		
21	Sa	Sir Walter Scott died, 1832	♏	5 45	6 00	1 10	7	5 46	5 59	1 40		
14th Sunday after Trinity		Day's Length: Northern 12.13; Southern 12.11										
22	Su	Japanese invaded French Indo-China, 1940	♏	5 46	5 59	2 22	7	5 47	5 58	2 46		
23	Mo	John Wesley Powell died, 1902	♏	5 47	5 57	3 33	8	5 48	5 57	3 51		
24	Tu	Battle of Monterey, 1846	♏	5 48	5 55	4 43	8	5 49	5 55	4 54		
25	We	President Wilson taken ill, 1919	♏	5 49	5 54	sets	8	5 49	5 54	sets		
26	Th	Germans advance in Poland, 1914	♏	5 50	5 52	6 57	9	5 50	5 52	7 01		
27	Fr	Railway strike in England, 1919	♏	5 51	5 50	7 20	9	5 51	5 51	7 30		
28	Sa	Poland partitioned by Germany & Russia, 1939	♏	5 52	5 49	7 44	9	5 51	5 50	8 00		
15th Sunday after Trinity		Day's Length: Northern 11.53; Southern 11.56										
29	Su	Munich pact signed, 1938	♏	5 54	5 47	8 11	10	5 52	5 48	8 33		
30	Mo	Battle of Major Montgomery, 1863	♏	5 55	5 45	8 43	10	5 53	5 47	9 09		



For double duty farm trucking

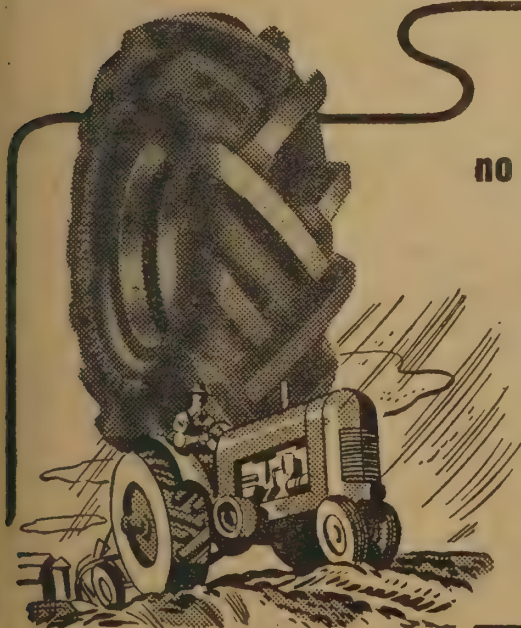
Both *off* and *on* the pavement the All-Purpose is ideal. *Extra* traction because the tough cleats *grip* the earth. Special tread design for positive self-cleaning. Wide riding bars give smooth going and long wear. Built for field to market hauling, home to town trips. Cool running. Change over and start saving with. . . .

B. F. Goodrich
All-Purpose Truck Tires

ALMANAC FOR OCTOBER, 1946

31 Days
10th Month

Days of Month	Days of Week	MOON'S PHASES, E. S. T.			MOON'S PLACE	LATITUDE of Northern States			SUN FAST	LATITUDE of Southern States		
		☾ First Quarter, 3d, 4:53 A.M. ☾ Full Moon, 10th, 3:40 P.M. ☾ Last Quarter, 17th, 8:28 A.M. ☾ New Moon, 24th, 6:32 P.M.	SUN rises	SUN sets		MOON sets	SUN rises	SUN sets		MOON sets		
HISTORICAL EVENTS					H. M.	H. M.	H. M.	H. M.	H. M.	H. M.		
1	Tu	Austria adopted new Constitution, 1920	♊	5 56	5 43	9 19	10	5 54	5 46	9 49		
2	We	Brooklyn tunnel wreck, 1918	♊	5 57	5 42	10 02	11	5 54	5 44	10 35		
3	Th	Steamer Evening Star sank, 1866	♊	5 58	5 40	10 52	11	5 55	5 43	11 25		
4	Fr	Battle of Ogdensburg, 1812	♊	5 59	5 38	11 49	11	5 55	5 42	morn		
5	Sa	Forest fires in Ontario, 1922	♊	6 00	5 36	morn	12	5 56	5 41	0 20		
16th Sunday after Trinity					Day's Length: Northern 11.33; Southern 11.42							
6	Su	Benjamin Pierce died, 1880	♊	6 02	5 35	0 52	12	5 57	5 39	1 19		
7	Mo	Wm. Penn landed, 1682	♊	6 03	5 33	1 58	12	5 58	5 38	2 20		
8	Tu	Battle at Savannah, 1779	♊	6 04	5 31	3 07	12	5 58	5 37	3 23		
9	We	Great Chicago fire, 1871	♊	6 05	5 30	4 18	13	5 59	5 35	4 26		
10	Th	German troops occupied Sudeten area, 1938	♊	6 06	5 28	rises	13	6 00	5 34	rises		
11	Fr	1st Edison invention patented, 1868	♊	6 07	5 26	6 21	13	6 01	5 33	6 29		
12	Sa	Robert E. Lee died, 1870	♊	6 08	5 24	6 50	14	6 01	5 32	7 06		
17th Sunday after Trinity					Day's Length: Northern 11.13; Southern 11.28							
13	Su	Ruth Elder rescued, 1927	♊	6 09	5 22	7 24	14	6 02	5 30	7 47		
14	Mo	Theodore Roosevelt shot, 1912	♊	6 10	5 21	8 05	14	6 03	5 28	8 34		
15	Tu	Zeppelin arrived in U. S., 1928	♊	6 11	5 19	8 56	14	6 03	5 27	9 28		
16	We	Town of Seneca formed, 1851	♊	6 12	5 17	9 55	14	6 04	5 26	10 28		
17	Th	U. S. troops entered Aachen, 1944	♊	6 14	5 16	11 02	15	6 05	5 25	11 32		
18	Fr	Queen Marie arrived in N. Y., 1926	♊	6 15	5 14	morn	15	6 06	5 24	morn		
19	Sa	Fannie Hurst born, 1889	♊	6 17	5 13	0 12	15	6 06	5 23	0 38		
18th Sunday after Trinity					Day's Length: Northern 10.53; Southern 11.15							
20	Su	Gen. MacArthur forces landed on Leyte, 1944	♊	6 18	5 11	1 23	15	6 07	5 22	1 43		
21	Mo	Louisiana ceded to Spain, 1764	♊	6 19	5 10	2 32	15	6 07	5 21	2 45		
22	Tu	Holocaust in New York, 1922	♊	6 20	5 09	3 39	16	6 08	5 20	3 46		
23	We	British broke Axis line at El Alamein, 1942	♊	6 21	5 07	4 44	16	6 09	5 19	4 44		
24	Th	U. S. Navy won Battle of Leyte Gulf, 1944	♊	6 22	5 06	sets	16	6 10	5 18	sets		
25	Fr	Battle of Pine Bluff, 1863	♊	6 23	5 04	5 47	16	6 11	5 17	6 00		
26	Sa	Von Ladendorff resigned, 1918	♊	6 24	5 02	6 12	16	6 12	5 16	6 32		
19th Sunday after Trinity					Day's Length: Northern 10.35; Southern 11.02							
27	Su	New York subway opened, 1904	♊	6 26	5 01	6 41	16	6 13	5 15	7 06		
28	Mo	Italy attacked Greece and Yugoslavia, 1940	♊	6 28	5 00	7 16	16	6 13	5 14	7 45		
29	Tu	Sir Walter Raleigh beheaded, 1618	♊	6 29	4 58	7 56	16	6 14	5 13	8 28		
30	We	John Adams born, 1735	♊	6 30	4 57	8 43	16	6 15	5 12	9 16		
31	Th	China proclaimed a republic, 1911	♊	6 31	4 56	9 37	16	6 15	5 11	10 09		



POSITIVE TRACTION—

no "slow down" mud-catching pockets!

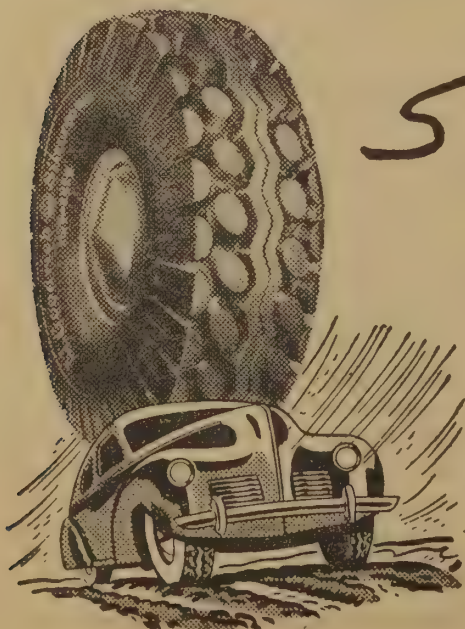
The open center, pocket-free tread design of B. F. Goodrich Tractor Tires doesn't hold mud or trash that slows you down and robs you of traction. You get the kind of bite and grip you need to get more work done in less time. Reinforced Cleats are in pairs. Continuous overlapping grip. Less slippage. Get *full* traction, when and where you want it, with B. F. Goodrich . . .

HI-CLEAT Tractor Tires

ALMANAC FOR NOVEMBER, 1946

11th Month
30 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.	MOON'S PLACE	LATITUDE of Northern States			SUN FAST	LATITUDE of Southern States		
				SUN rises	SUN sets	MOON sets		SUN rises	SUN sets	MOON sets
		☾ First Quarter, 1st, 11:40 P.M.		H. M.	H. M.	H. M.		H. M.	H. M.	H. M.
		☾ Full Moon, 9th, 2:10 A.M.								
		☾ Last Quarter, 15th, 5:35 P.M.								
		☾ New Moon, 23d, 0:24 P.M.								
HISTORICAL EVENTS										
1	Fr	Boris of Bulgaria abdicated, 1918	♊	6 32	4 54	10 36	16	6 16	5 10	11 05
2	Sa	Steamer "Lyonnais" sunk, 1856	♊	6 33	4 53	11 40	16	6 17	5 09	morn
30th Sunday after Trinity				Day's Length: Northern 10.17; Southern 10.50						
3	Su	British blockade of North Sea, 1914	♊	6 35	4 52	morn	16	6 18	5 08	0 04
4	Mo	Stephen Johnson Field born, 1816	♊	6 36	4 50	0 46	16	6 19	5 07	1 04
5	Tu	Paul Jones-Hassan naval battle, 1812	♊	6 38	4 49	1 55	16	6 20	5 07	2 06
6	We	Lincoln elected president, 1860	♊	6 39	4 48	3 05	16	6 21	5 06	3 10
7	Th	American forces landed in North Africa, 1942	♊	6 40	4 46	4 18	16	6 22	5 05	4 15
8	Fr	Madame Roland beheaded, 1793	♊	6 41	4 45	5 32	16	6 23	5 04	5 23
9	Sa	Marie Dressler born, 1873	♊	6 42	4 44	rises	16	6 24	5 04	rises
31st Sunday after Trinity				Day's Length: Northern 9.59; Southern 10.38						
10	Su	Napoleon declared First Consul, 1799	♊	6 44	4 43	5 58	16	6 25	5 03	6 24
11	Mo	Earthquake in Chile, 1922	♊	6 45	4 42	6 45	16	6 26	5 02	7 16
12	Tu	1st U. S. oil exported, 1861	♊	6 46	4 41	7 42	16	6 27	5 01	8 17
13	We	Garfield's assassin tried, 1881	♊	6 48	4 40	8 49	16	6 28	5 01	9 22
14	Th	Germany seized Kiaochau, 1897	♊	6 49	4 39	10 01	15	6 29	5 00	10 29
15	Fr	Danzig proclaimed free city, 1920	♊	6 50	4 38	11 14	15	6 30	4 59	11 36
16	Sa	Turkey proclaimed "holy war", 1914	♊	6 51	4 37	morn	15	6 30	4 59	morn
22d Sunday after Trinity				Day's Length: Northern 9.43; Southern 10.27						
17	Su	Uprising in Boston, 1747	♊	6 53	4 36	0 24	15	6 31	4 58	0 39
18	Mo	Sir David Wilkie, painter, born, 1785	♊	6 54	4 35	1 31	15	6 32	4 58	1 40
19	Tu	Jay's Treaty concluded, 1794	♊	6 55	4 34	2 36	14	6 33	4 57	2 39
20	We	U. S. forces landed on Tarawa Islands, 1943	♊	6 57	4 34	3 40	14	6 34	4 57	3 37
21	Th	France became an empire, 1852	♊	6 58	4 33	4 43	14	6 35	4 57	4 34
22	Fr	Henry Wilson died, 1875	♊	6 59	4 32	5 45	14	6 36	4 56	5 30
23	Sa	Vera Cruz evacuated, 1914	♊	7 00	4 31	sets	13	6 36	4 56	sets
23d Sunday after Trinity				Day's Length: Northern 9.29; Southern 10.19						
24	Su	Riots in Havana, 1902	♊	7 02	4 31	5 15	13	6 37	4 56	5 43
25	Mo	Lope Vega, playwright, born, 1562	♊	7 03	4 30	5 53	13	6 38	4 55	6 25
26	Tu	1st refrigerator car patented, 1867	♊	7 04	4 30	6 38	13	6 39	4 55	7 11
27	We	Steamer "San Pablo" sunk, 1908	♊	7 05	4 29	7 28	12	6 40	4 55	8 02
28	Th	Washington Irving died, 1859	♊	7 06	4 29	8 26	12	6 41	4 54	8 57
29	Fr	Byrd reached South Pole, 1929	♊	7 07	4 28	9 28	12	6 42	4 54	9 54
30	Sa	Iceland became independent, 1918	♊	7 08	4 28	10 32	11	6 43	4 54	10 52



SPECIAL MUD-SNOW TIRE!

If you need tires with extra mud-and-snow fight in them, get these B. F. Goodrich Mud-Snow Tires. Designed for use both *on* and *off* the pavement. Deep, open tread is self-cleaning; does not pack with mud, snow, or pick up gravel. Tread pulls equally well in reverse or forward. Good in all weather, the year 'round. And it handles well—wears well. See us about it.

B. F. Goodrich

ALMANAC FOR DECEMBER, 1946

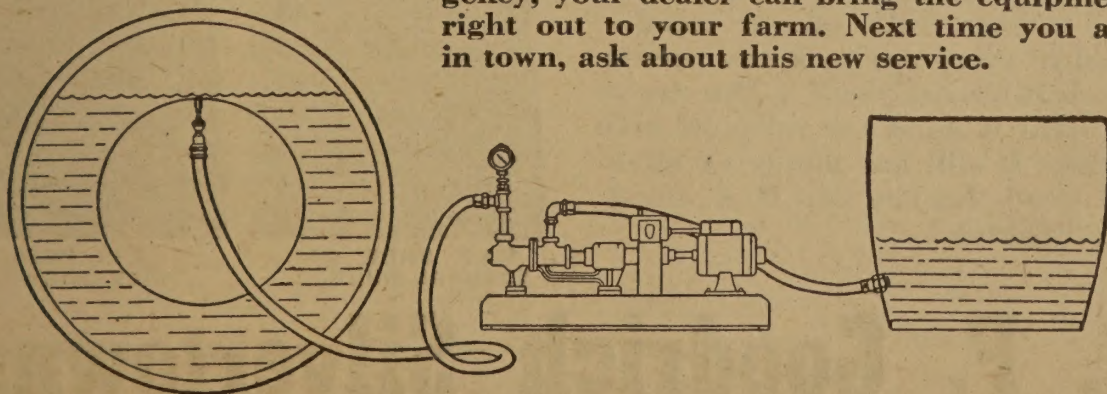
12th Month
31 Days

Days of Month	Days of Week	MOON'S PHASES, E. S. T.		MOON'S PLACE	LATITUDE of Northern States			SUN FAST	ATTITUDE of Southern State		
		☾ First Quarter, 1st, 4:47 P.M.	☾ Full Moon, 8th, 0:52 P.M.		SUN rises	SUN sets	MOON sets		SUN rises	SUN sets	MOON sets
		☾ Last Quarter, 15th, 5:57 A.M.	☾ New Moon, 23d, 8:06 A.M.								
		☾ First Quarter, 31st, 7:23 A.M.									
HISTORICAL EVENTS											
Advent Sunday				Day's Length: Northern 9.19; Southern 10.10							
1	Su	Clarke Mills, sculptor, born, 1815	☾	7 09 4 28	11 37	11	6 44 4 54	11 52			
2	Mo	Austrians took Belgrade, 1914	☾	7 10 4 28	morn	10	6 45 4 54	morn			
3	Tu	Balkan war armistice signed, 1912	☾	7 11 4 27	0 45	10	6 45 4 54	0 52			
4	We	Roosevelt, Churchill, Stalin met at Teheran, 1943	☾	7 12 4 27	1 53	10	6 46 4 54	1 53			
5	Th	Greece recalled King, 1920	☾	7 14 4 27	3 04	9	6 46 4 54	2 59			
6	Fr	La Salle entered Niagara River, 1678	☾	7 15 4 27	4 19	9	6 47 4 54	4 07			
7	Sa	Japs attacked Pearl Harbor, 1941	☾	7 16 4 27	5 38	8	6 48 4 54	5 19			
3d Sunday in Advent				Day's Length: Northern 9.09; Southern 10.05							
8	Su	Ecuador broke with Germany, 1917	☾	7 17 4 26	rises	8	6 49 4 54	rises			
9	Mo	British drove Italians out of Egypt, 1940	☾	7 18 4 26	5 24	7	6 50 4 54	5 57			
10	Tu	U. S. acquired Puerto Rico, 1898	☾	7 19 4 26	6 28	7	6 51 4 55	7 02			
11	We	Germany declared war on the U. S., 1941	☾	7 20 4 26	7 41	7	6 51 4 55	8 12			
12	Th	1st transatlantic wireless, 1901	☾	7 21 4 26	8 57	6	6 52 4 55	9 21			
13	Fr	Drake began World voyage, 1577	☾	7 21 4 26	10 10	6	6 53 4 55	10 29			
14	Sa	George Washington died, 1799	☾	7 22 4 27	11 21	5	6 53 4 55	11 33			
3d Sunday in Advent				Day's Length: Northern 9.04; Southern 10.02							
15	Su	Hartford Convention, 1814	☾	7 23 4 27	morn	5	6 54 4 56	morn			
16	Mo	Germans began Battle of the Bulge, 1944	☾	7 23 4 27	0 29	4	6 55 4 56	0 33			
17	Tu	King Leopold II died, 1909	☾	7 24 4 27	1 32	4	6 55 4 56	1 31			
18	We	Slavery abolished in U. S., 1865	☾	7 24 4 27	2 35	3	6 56 4 57	2 28			
19	Th	Corrugated paper patented, 1871	☾	7 25 4 28	3 38	3	6 57 4 57	3 25			
20	Fr	1st cotton mill in U. S. opened, 1790	☾	7 25 4 28	4 40	2	6 58 4 58	4 21			
21	Sa	Manhood suffrage in Austria, 1906	☾	7 26 4 29	5 42	2	6 58 4 58	5 17			
4th Sunday in Advent				Day's Length: Northern 9.03; Southern 10.00							
22	Su	Soviet Republic formed, 1922	☾	7 26 4 29	6 44	1	6 59 4 59	6 14			
23	Mo	Battle near New Orleans, 1814	☾	7 27 4 30	sets	1	6 59 4 59	sets			
24	Tu	Kit Carson, pioneer, born, 1809	☾	7 27 4 30	5 24	0	7 00 5 00	5 57			
25	We	1st complete opera broadcast, 1931	☾	7 28 4 31	6 21	S	7 00 5 01	6 51			
26	Th	Frederick Remington died, 1909	☾	7 28 4 31	7 21	1	7 00 5 01	7 48			
27	Fr	Vicksburg assaulted, 1862	☾	7 28 4 32	8 24	1	7 01 5 02	8 46			
28	Sa	Earthquake in Sicily, 1908	☾	7 29 4 33	9 28	2	7 01 5 02	9 44			
Sunday after Christmas				Day's Length: Northern 9.05; Southern 10.02							
29	Su	Buffalo burned by Indians, 1813	☾	7 29 4 34	10 33	2	7 01 5 03	10 43			
30	Mo	Henry Winter Davis died, 1865	☾	7 29 4 35	11 39	3	7 01 5 03	11 43			
31	Tu	Manhattan Bridge opened, 1909	☾	7 30 4 36	morn	3	7 02 5 04	morn			

Now . . . Tires Liquid-Weighted Right on your Tractor

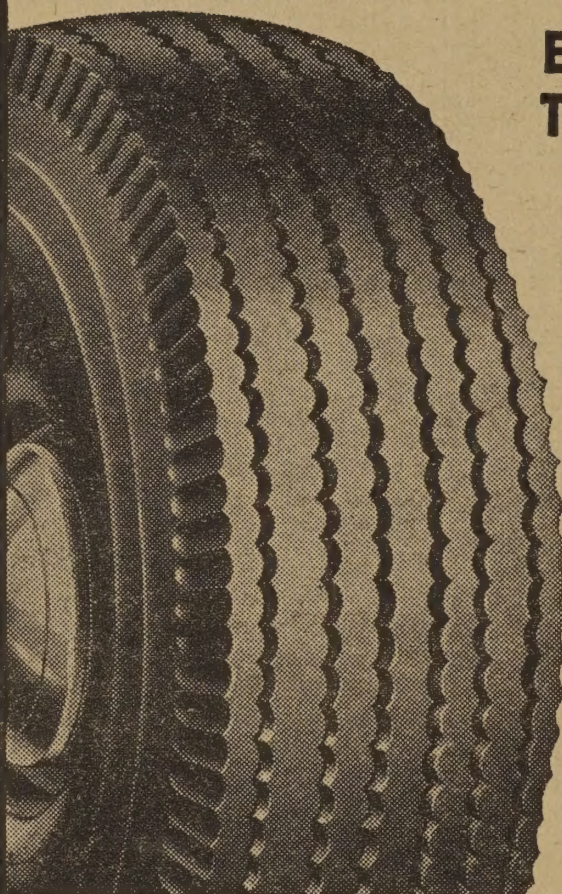
Liquid is drawn from a barrel and forced into the tire by an electrically driven pump—safely, conveniently, quickly. A 10-38 tire can be weighted in just 15 minutes!

And the pump is portable . . . in an emergency, your dealer can bring the equipment right out to your farm. Next time you are in town, ask about this new service.



This New Passenger Car Tire **OUTWEARS PREWAR TIRES**

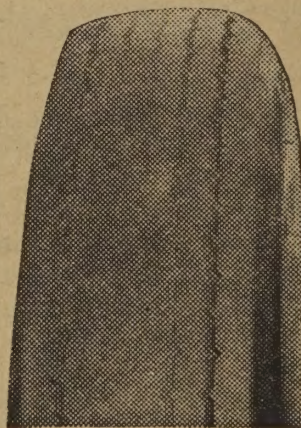
**EQUIP YOUR CAR WITH THESE
TIRES FOR LONGER MILEAGE**



Why is the new Silvertown able to outwear prewar tires? It's made of a new, better rubber that helps it run cooler—wear better. Then, the carcass is 35% stronger than prewar, with a new, stronger kind of tire body. This stronger construction permits a feature tire engineers have dreamed about—a wider, flatter tread. Called the "Road Level Tread", it puts more rubber on the road to share the wear—evenly. Next time you need new tires—compare the wear! Get the tire that outwears prewar tires—the new B. F. Goodrich Silvertown.

COMPARE THE WEAR — Same Mileage — Same Test

Both these tires went thousands of miles on a test car. They were carefully rotated so that each got equal wear. The results? See for yourself. The tire at the left was made of natural rubber, with prewar tread—equal in every way to a new prewar tire. It is almost "bald"! The tire at the right is good for miles of safe driving. It still has plenty of effectual tread. It's the new B. F. Goodrich Silvertown.



**TIRE MADE OF
NATURAL RUBBER**



**THE NEW
SILVERTOWN**

B. F. Goodrich Silvertowns

Where To Go For Additional Information

Often you may want specific information on a certain subject but do not know where to go to get it. There are usually at least three good sources of general information in each community—the county agent, the local newspaper, and the public library. If these people cannot answer your questions, they can usually tell you where to go to find the answer. Other sources of information on some common subjects are listed below.

Farming Problems

Your County Agricultural Agent:
Your State Agricultural College:
The editor of your state farm magazine.

Social Security

Social Security Board, 1825 H St., N.W.,
Washington, D. C. or Regional Office.

Veterans' Rights

Veterans Administration, Vermont Ave. between
H and I Sts., Washington, D. C.
or Regional Office.

Ceiling Prices

Office of Price Administration, Federal Office
Building 1, Second and D Sts., S.W., or Re-
gional Office.

Soil Erosion

Soil Conservation Service, Dept. of Agriculture,
Washington, D. C. or County Agricultural
Agent.

Income Tax

Nearest Collector of Internal Revenue.

Fish, Birds, Wild Life

Fish and Wildlife Service, Department of the
Interior, The Merchandise Mart, 222 North
Bank Drive, Chicago 54, Illinois.

College Scholarships

Write direct to the colleges and universities in
which you are interested, asking what scholar-
ships are available.

Sending Money Abroad

Division of Money Orders, Postoffice Department,
12th Street and Pennsylvania Ave., N.W.,
Washington, D. C., or Local Postoffice.

National Parks

National Park Service, Department of the In-
terior, The Merchandise Mart, 222 North Bank
Drive, Chicago 54, Illinois.

Geography

National Geographic Society, Washington, D. C.

Tires and Rubber

Your local B. F. Goodrich dealer or The B. F.
Goodrich Co., Akron, Ohio, or Los Angeles,
Calif.

Minerals (identification of sample)

Bureau of Mines, Department of the Interior,
C Street between 18th and 19th Sts., N.W.,
Washington, D. C.

Maps (detail map of your locality)

U. S. Geodetic Survey, 14th St., between Con-
stitution Ave. and E St., N.W., Washington,
D. C.

Government Employment

Civil Service Commission, 8th and F Sts., N.W.,
Washington, D. C., or Regional Office.

Local History

Find out if there is a historical society in your
county seat. If there is not, write the State His-
torical Society at your state capital.

Service Men's Dependency Allotments

Army: Office of Dependency Benefits, Newark
2, N. J.
Navy: U. S. Navy, Field Branch, Bureau of Sup-
plies and Accounts, Euclid Ave. and East 13th
St., Cleveland 14, Ohio.

Civil Aeronautics

Local Airport; Airport of nearest city; Civil
Aeronautics Administration, Washington, D. C.

Deep Freezing

State Agricultural College

Farm Ponds (How to build)

Fish & Wild Life Service, Biology Division, Soil
Conservation Service, Washington, D. C.

Fire Prevention

National Fire Protection Association, 60 Battery-
march St., Boston 10, Mass.

Forestry Service

Local Forest Rangers Office or U. S. Forest
Service, Washington, D. C.

G. I. Loans

Local Bank or Local Office of Veterans Admin-
istrator, Veterans' Administration Office, Vet-
erans' Administration Building, Washington,
D. C.

Grazing Service

County Agricultural Agent or U. S. Forest Ser-
vice, Washington, D. C.

Maps & Points of Interest

Nearest Auto Club or Chamber of Commerce of
city to be visited.

Rural Electrification

Rural Electrification Administration, Boatmen's
Bank Bldg., St. Louis, Mo.

Safety Helps

National Safety Council, 20 North Wacker Drive,
Chicago, Ill.
(also—see Page 7)

Surplus Land

Federal Land Banks of your district.

Government Surplus Property

Surplus Property Board, Washington, D. C.

Hunting & Fishing Seasons

State Game Warden



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